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Deaths at the borders database: evidence of deceased migrants’ bodies found along the southern external borders of the European Union

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ABSTRACT
Irregular migrants and asylum seekers have died and continue to die attempting to cross the external borders of the EU without authorisation, seeking to enter the territories of its Member States. Yet, remarkably little is known about these ‘border deaths’. In 2015, the Human Costs of Border Control project published the Deaths at the Borders Database for the Southern EU, an open-source ‘evidence base’ of individualised information about people who have died border deaths between 1990 and 2013, sourced from the death management systems of Spain, Gibraltar, Italy, Malta and Greece. It is the first database on border deaths in the EU to be based on official sources as opposed to the news media. The project involved searching 563 state-run death registry archives and deductively selecting the death certificates of persons who died border deaths. This paper describes, in detail, the making of the Deaths at the Borders Database: from the systematic, multisited, quantitative data collection and qualitative case studies, to the construction and final results of the Database itself.

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Irregular migration; borders; death; registration; European Union

Introduction
People have been attempting to cross the external borders of the European Union (EU) without authorisation since the late 1980s (Balibar 2004; Düvell 2006; de Haas 2008; van Houtum 2010). In making the attempt to enter the EU clandestinely, irregular border-crossers face a range of risks, including the risk of death. ‘Border deaths’1 include drowning in shipwrecks, dying of dehydration and hypothermia on boats or in rural or wild areas near land borders, and instances of direct (e.g. shootings) and indirect (e.g. landmines) violence. Over the last decade, the EU’s Southern borders – namely, the external borders of Greece, Italy, Malta, Spain and Gibraltar (see Figure 1) – have become
known as sites of an escalating number of border deaths. While there are many people who survive the journey, it is the deceased irregular border-crossers with whom the *Deaths at the Borders Database* and this paper are concerned.

While irregular migration into the EU has been the subject of much discussion (Tria
dofyllidou 2016), the only available data on those who die was sourced from news media. The Fortress Europe blog lists news reports of those who have died on their journey to the EU. UNITED Against Intercultural Action’s List of Deaths is a systematic record of news collected by the extensive civil society network. The newer Missing Migrants Project of the International Organisation for Migration is also sourced largely from news. Scholarship on border deaths is therefore heavily reliant on data sourced from news media (Cut
titta 2006; Carling 2007; Spijkerboer 2007; Kiza 2008; Weber and Pickering 2011; Pickering and Cochrane 2013; Williams and Mountz 2016). News media is not a consist
tently reliable source of data: (1) not every shipwreck might be considered to be ‘news’, and media attention to the issue fluctuates over time; (2) each story is covered differently and the details important to a news story are not the same as those needed for research and (3) there is a risk of over-counting if, for example, one journalist covers the missing from a shipwreck while another covers the discovery of unidentified corpses in fishing nets (Last and Spijkerboer 2014). Yet, official data on irregular border-crossers is limited, and there are no official death tolls.

Mortality is a standard measure of human well-being. Accurate death statistics for irreg
ular border-crossers are needed to determine the severity of the risk they face and to assess the impact of policies and specific practices in reducing deaths. Data should preferably be disaggregated to enable comparison of age, sex or nationality groups, seasons and routes. An individualised death toll is important to raise awareness of the issue and its history in a dignified manner that acknowledges the humanity that has been lost.

From a pilot study in Sicily in November 2011, Spijkerboer (2013) demonstrated that death certificates could be used as an official source to count border deaths. Death cer
tificates are public, legal documents archived in registries that record details about deceased individuals in that municipality. They are issued in the course of the state’s

![Figure 1. Map illustrating where data were collected for the Deaths at the Borders Database.](image-url)
management of a dead body as proof of death. Death management systems vary between and within countries, but they all encompass a series of stages, including a recording stage. Spijkerboer found death certificates of migrants who had died in shipwrecks whose bodies had been processed in Pozzallo and Porto Empedocle to be a reliable official source and determined that consulting local death registries along the Mediterranean coast could ‘lead to a comprehensive data set on the number of deaths, the approximate time of death, and the place where the bodies were found’ (Spijkerboer 2013: 221). Our project tested Spijkerboer’s hypothesis that death records are a viable source of official data on border deaths in the region.

Our initial aim was to generate an official count of border deaths in the jurisdiction of southern EU Member States over the period 1990–2013. However, after pilot studies in Greece (October 2013) and Spain (February 2014), it became apparent that death records were an unexpectedly rich source of data, revealing more than where, when and how many migrants deceased, but also clues as to who they were and how they had died. Loath to miss out on the opportunity to know more, the aim became to collect as much information as possible from the death management systems of southern EU Member States, so as to create a publically available, individualised ‘evidence base’ of people who have died attempting to cross the southern EU external borders and whose bodies have been found and managed by European authorities.

This paper outlines the research design and methods used for systematic, multi-sited data collection from death registry archives and the construction of the open-source Deaths at the Borders Database. Then, it presents the findings of the quantitative data collection and the qualitative case studies conducted alongside. The paper ends with a discussion of the use of death records as an official source of data about border deaths.

Method

Given the expansive geographical and temporal coverage and the challenges of accurately identifying death certificates of people who died border deaths, the research benefitted from some guiding principles. On the one hand, as multi-country data collection from local municipality archives had not been attempted before and concerned a subject on which there was very little pre-existing literature, it was important that the research design had the flexibility to evolve with what we learned, as we learned it. On the other hand, in order to produce a single comprehensive and accurate database, it was important that the research design maintained consistency in its approach. These two principles, flexibility and consistency, provided the parameters for the planned research and for methodological decisions taken during data collection.

As it was not possible to fully comprehend what the final database would consist of without first substantiating what data we could collect, the study was designed with two Stages:

(1) Collect data on border deaths from death records.
(2) Publish an open source, individualised but anonymised database.

The methods used to complete these Stages are outlined below.
Stage 1: collect data on border deaths from death records

The plan to collect data from death records involved three steps: check that death records are accessible and reliable across all five countries of study; identify relevant death registries and implement a comprehensive, uniform approach to searching for and selecting data.

Pilot studies to determine reliability of death records

Spijkerboer’s (2013) study in Sicily had determined that death certificates could be a reliable source of official data on border deaths, but the exploratory nature of his research and the fact that it was limited to two municipalities in one country meant that his conclusions were not generalisable. According to a review by the World Health Organisation, death registration is 100% complete in Greece, Italy, Malta and Spain, as in most of Europe, meaning that all adult deaths are registered for the population covered by the death management system (Mathers et al. 2005). However, these systems are not designed with border deaths in mind, so it would be necessary to check completeness ourselves. Spijkerboer’s study focused on the reliability of death certificates exclusively, but death management systems may generate a more accessible and reliable official source. Finally, it was important to test whether death registries would be accessible in Greece, Spain, Malta and Gibraltar, and throughout Italy.

Pilot studies were conducted in Greece, Italy, Malta, Spain and Gibraltar to map the death management systems of these countries and all potential sources of border death data. In each pilot study, semi-structured, formal interviews were conducted with key actors in death management to gain an overview of the procedures and paper-trail from discovery of a body to burial. Key actors were identified by Internet and phone inquiries, and through word-of-mouth once in the field. Depending on the location, key actors include officials of the police/coast guard, civil registries, courts/magistrates/public prosecutors, legal medical institutes/coroners/morgues, cemeteries, municipality/provincial administration and funeral services. NGOs and individuals from the local community were also contacted for referrals and interviewed if they were involved in managing or monitoring border deaths. Pilot studies were intensive and extensive, aiming to exhaust all avenues of qualitative and quantitative data collection from local official sources.

Pilot studies in March 2014 in Malta and in February 2015 in Gibraltar covered those territories. Locations of pilot studies in Greece, Italy and Spain were selected for different reasons. In October 2013, we visited the two locations which had seen the most border deaths in Greece: the Aegean island of Lesvos and the Greek-Turkish land border along the Evros river. In contrast, in February 2014, we visited the Spanish administrative regions of Malaga and Valencia to test whether death registries were also reliable in places where only a few border deaths would be found, and the region of Castellón to confirm that it was unnecessary to search further up the coast from Valencia. Finally, in June 2014, we conducted the Italian pilot study in Apulia to test the general applicability of the results of Spijkerboer’s study in Sicily and to determine the historical reliability of death registries (Apulia was the site of mass arrivals from Albania in the 1990s and early 2000s). The variety of locations provided insight into the characteristics and particularities of death management systems of Mediterranean EU Member States and the reliability and accessibility of death registries as an official source of data about border deaths.
It was anticipated that municipalities that had somehow ‘unusual’ experiences of border deaths may also manage these deaths in an unusual way. Therefore, field work similar to the pilot studies was planned for the remaining southern EU external land borders (Ceuta, Melilla and northwest Greece) and for Lampedusa, which was the site of the Italian government’s ‘border theatre’ before Mare Nostrum (Cuttitta 2014). Otherwise, the country pilot studies provided sufficient context for data collection.

**Country strategies for identifying relevant death registries**

The second step in the research design was to identify which death registries in the external EU border regions might register border deaths. Data collection from Malta and Gibraltar was exhaustive: Gibraltar only has one Public Registry and Malta’s two death registries are centralised in the main Public Registry in Valletta. However, Greece, Italy and Spain have thousands of liksiarcheia (ληξιαρχεία), stato civile and Registros Civiles; it would be unrealistic and pointless to search them all.

On the basis of news-based border death data and literature on irregular migration, the geographical scope of the research could be limited to municipalities with jurisdiction over the borders shown in Figure 1. Different strategies were developed for Greece, Italy and Spain to identify relevant registries. These strategies took into account: knowledge of the death management system gained from the pilot studies; logistics of covering the areas in Figure 1 and the target to complete the Database within a year so that it would be as up-to-date as possible when released.

**Greece.** Different irregular border-crossing points have come in and gone out of use between 1990 and 2013. The research was concerned with the first physical external borders people cross on their way into the EU, namely, the land and sea borders with Turkey, the land border with Albania, and the sea border south of Crete where boats departing from Egypt have been known to arrive.

Dozens of islands in the Aegean Sea ‘border’ the Turkish coastline in the sense that they could be the first port of entry for people travelling by boat. In addition to the southern coast of Crete and the – mostly rural – municipalities with jurisdiction over the land borders with Turkey and Albania, there were an estimated 100 municipalities to visit. But Greece twice changed geography and powers of local administration between 1990 and 2013, multiplying the locations of registry archives (Tselepi et al. 2016). In addition to limited transportation between islands, these factors contributed to the decision to divide data collection in Greece into six regions (Figure 2) and allocate each region to one researcher.

Researchers conducted desk-based research on the total number of registries (liksiarcheia) in each region. Once in the field, they could exclude irrelevant registries if there were no media or NGO reports of deaths there, if more than one local official claimed there was little to no chance of any border deaths being registered there, and the registrar of that registry confirmed this. Informal interviews with local actors were conducted by phone or in person. By allocating researchers to a particular region, they were able to become familiar with the local officials and bureaucratic hierarchy, making it easier to identify relevant registries for data collection and to gain access.

**Italy.** Italy is the country of first arrival on several sea routes across the southern external borders of the EU. Boats arriving on the coasts of Apulia, Calabria, Sicily and Sardinia or shipwreck on the way, depart from Algeria, Tunisia, Libya, Egypt, Turkey and Syria.
Stowaways have also been discovered on international commercial and passenger ships arriving in Italian ports.

The Fortress Europe blog and UNITED’s List of Deaths were used to create a list of all provinces in or near which shipwrecks or bodies had been reported. According to Italian law (DPR 396/2000), all deaths should be registered by the municipality in which the person died or their body was found. Therefore, data collection was planned to include all registries along the coasts of these provinces, an estimated 250 registries to be covered by two researchers.

The Italian pilot study found that provincial authorities are granted considerable discretion to design their own procedures for death management, which creates the potential for border deaths to be registered in stato civile of inland comune. Consequently, the researchers began data collection in each new province in the provincial capital to conduct interviews with key actors to determine whether to include inland registries and/or exclude certain coastal registries in that province.

Spain. The Strait of Gibraltar has always been a crossing point between Africa and Europe, but several sea routes emerged between 1990 and 2013, including across the Alboran Sea to mainland Spain from Morocco and Algeria, and to the Canary Islands from the west coasts of Morocco and Western Sahara, and later from Mauritania, Senegal and the Gambia. Spain also has two land borders with Morocco, surrounding the autonomous cities of Ceuta and Melilla.
In Spain, deaths are investigated and registered in the judicial district in which the deceased’s body was found. We uncovered no evidence suggesting that authorities would diverge from this practice. Indeed, Spain has an extraordinarily standardised death management system that operates according to the same procedures carried out by the same actors in each municipality. Therefore, Registros Civiles with jurisdiction over the coasts of the Canary Islands, Balearic Islands and southern mainland Spain up to and including Valencia as well as Ceuta and Melilla were relevant for data collection: an estimated 200 registries to be covered by two researchers.

Gaining access to registries. Although death records are public documents, the standing of researchers in terms of their access to death registry archives is not clear and local authorities have varying perspectives. Rather than adopt a particular interpretation of rights of access, researchers would follow procedures requested by each registry and respect and accommodate the particular concerns of the authority they were dealing with.

Common methodology, balancing consistency and flexibility

After determining that death registries were reliable and accessible, and developing country strategies for identifying registries to search, the third step was to implement a consistent way of searching registries and extracting data about border deaths. The Common Methodology comprised of:

- A set of instruments for collecting and recording data.
- A working definition of ‘border death’.
- A step-by-step guide to searching archives and using the instruments.

Researchers familiarised themselves with the Common Methodology during a training workshop in April 2014. The research design provided full-time long-distance logistical and methodological support; researchers would operate independently in the field and, therefore, needed a harmonised understanding of the research to be done. This decentralised approach fostered a sense of collective ownership and solidarity, contributing to the comprehensiveness of the work done.

Searching for border deaths. Registries do not maintain indices of foreign deceased, nor is it common to indicate on the death certificate what the person was doing when he or she died. Identifying border deaths in death registries is a matter of deduction, for which researchers needed to search directly through the registry books containing death certificates issued between 1 January 1990 and the day on which they visited the registry. Instructions for Field Researchers guide the reader through excluding death certificates of persons who certainly did not die border deaths, for example, European citizens and residents. This vastly reduced the number of death certificates the field researcher had to examine, speeding up the search through thousands of death certificates per registry.

A working definition. Researchers searched for a particular kind of ‘border death’ according to a list of inclusion and exclusion criteria specifically for people who die attempting to cross southern EU external borders without authorisation whose bodies would be managed by authorities in the EU between 1990 and 2013. People who died shortly after arriving, from factors directly attributable to border-crossing, are included, but not those who died in detention or living on the streets or trying to travel on to another EU Member State. Researchers selected cases based primarily on the information...
in the death certificate, and secondarily from other documents or discussions with key actors. If in any doubt about whether it fell within the working definition, researchers recorded the case, to be subjected to review in Stage 2 of the research.

Instruments for data collection. When a researcher identified a possible border death, the Common Methodology provided a set of instruments to collect data. If permitted, researchers also made a copy of the death certificate. The instruments include a codebook for extracting data from documents, a logbook for recording experiences and results of searching a registry and an Excel template for entering data from codebooks. The instruments were developed on the basis of the Greek and Spanish pilot studies, tested for practicability and content during the Maltese pilot study and tested for clarity and usability during the training workshop.

The codebook (one per border death) is made up of four parts: administration of data collection, procedural information about how the body was discovered and managed, personal information about the deceased and information about the cause and circumstances of his/her death. Data are assumed to come from the death certificate; any alternative source is noted next to the relevant information. The template corresponds with the variables in the codebook.

The logbook (one per registry visited) served three purposes. First, it offered space to record qualitative data collected from actors they encountered in the field. Second, researchers recorded if and why they had consulted alternative sources to ensure traceability of data. Lastly, the logbooks served as a reporting mechanism for the particular strategies and tactics employed to gain access to and search through that registry. Researchers sent logbooks soon after visiting registries, which were reviewed immediately, enabling ongoing discussion of methodology and improving coordination and consistency.

Handling personal, sensitive data. Collecting data from death management systems exposes a considerable amount of personal information. On the advice of the Ethics Committee of the Law Faculty of Vrije Universiteit Amsterdam, only researchers working on the Database had access to any copies of original documents and all data being transferred from the field were encrypted and password protected.

Stage 2: publish an open source, individualised but anonymised database

Stage 2 of the research plan concerned compiling an accessible database that presents data on each person deceased rather than the incident, anonymised out of respect for the privacy of the deceased and their families. Given the volume and ambiguity of the raw data, compiling the database was a collective effort; every decision concerning what and who the Database would include was made by at least two persons and preferably by all five members of the compilation team.

There were four steps envisioned in planning the publication of the Deaths at the Borders Database open source. First, researchers would clean and check data against original documents (where available) and review the substance of the data. Second, the team would re-classify the raw data into clear variables that presented detail while ensuring anonymity of the persons deceased. In the spirit of creating an ‘evidence base’, the Deaths at the Borders Database was built bottom up: starting with the data from each registry to create regional, then country datasets, which was only compiled into a single database shortly before publication.
The third step would be to decide who to include. Who had died a border death was not certain in all cases. A ‘certainty level’ variable was added to reflect the degree of certainty that each case was a border death based on uniform criteria derived from reviewing the raw data.

The final step would be to make the Database accessible to the wider public. Dutch Data Design\textsuperscript{10} worked with researchers to create an interactive visualisation of the Database that illustrated its main findings. This visualisation is based on a simplified dataset of merged variables illustrating when, where, how and who had died. The visualisation is embedded in a website that hosts free downloads of the Database in English, national datasets for Greece, Italy and Spain translated to their official languages and summaries of the methodology and preliminary findings of the research.

**Discussion of findings**

In the vast majority of places illustrated by Figure 1, death certificates are consistently issued for deceased migrants whose bodies are found and archived in municipality registries throughout the regions of the EU Member States included in the study. Between April 2014 and February 2015, researchers searched through over two million death certificates in 563 death registries, as well as other documents in municipality, cemetery and pathologists’ offices and collected 4147 cases of possible border deaths. Interviews were conducted with 78 key actors during pilot and case studies in 11 locations, and many more conversations were had with officials encountered during data collection. In May 2015,\textsuperscript{11} the *Deaths at the Borders Database for the Southern EU* was published open source on www.borderdeaths.org, complete with interactive visualisation (see Figure 3), providing information about 3188 persons who died border deaths from 1990 to 2013 and whose bodies were processed in Greece, Italy, Malta, Spain and Gibraltar. In short, the answer to the question whether death records can be used as a source of official data on border deaths is: yes.

The findings of quantitative data collection and field work that explain the contents of the *Deaths at the Borders Database* are presented in two parts: the first looking at death management systems as a source of data on border deaths, and the second looking at death certificates as the primary ‘access point’ to data recorded by death management

![Figure 3](https://www.borderdeaths.org)

*Figure 3.* Illustration of the 3188 persons recorded in the Deaths at the Borders Database, 1990–2013. (Interactive version available at [www.borderdeaths.org](http://www.borderdeaths.org)). © Dutch Data Design.
systems. The findings demonstrate the accuracy, comprehensiveness and limitations of the Database.

**Death management systems generate data about border deaths**

While 3188 is already too many dead among a predominantly young and healthy population, the number of border deaths recorded were far fewer than estimates from UNITED and the Fortress Europe blog (Figure 4). The difference is due to the source of data: *Deaths at the Borders Database* is a collection of information from EU Member State death management systems that only deal with bodies that have been found or brought within their jurisdictions, whereas the lists of UNITED and the Fortress Europe blog are sourced primarily from news media, which also report on bodies found in EU-neighbouring countries and the missing. However, while death management systems cannot provide a total count of border deaths, they generate considerable information about those in their jurisdictions.

Figure 5 illustrates general characteristics of a death management system. When a dead body is found or a person dies of unnatural causes (i.e. not of old age or known illness or condition), the police are notified. The police inform a judge or public prosecutor, who opens an investigation into the cause and circumstances of death. The processes triggered by the discovery of a dead body or an unnatural death can be categorised into three stages: investigation of the death, recording of the death and burial. A pathologist determines the medical cause of death, while forensic experts, police, coast guards and witnesses report evidence concerning the circumstances of death to the judge or public prosecutor. The investigation stage culminates in the official declaration of an unnatural death as a homicide, suicide or accident, triggering the recording stage. Death certificates are issued by the civil registry in which jurisdiction the person died or the body was found (Greece, Italy, Malta, Spain and Gibraltar) or by the civil registry in which jurisdiction the body was buried (Italy and Greece). At this point, families can claim the body and organise a

![Figure 4](image-url)
funeral. If the deceased person is unidentified, if no family members claim the body or if the family cannot afford a funeral and grave site, the municipality is responsible for the burial.

As with any bureaucratic system, death management generates paperwork, including reports, official communications, declarations and permits. There are limitations in terms of accessibility and retention: not all documents are consistently archived (e.g. autopsy reports), some are archived only temporarily (e.g. court files) and some are confidential (e.g. police reports, autopsy reports and court files for ongoing investigations). Nonetheless, in all southern EU Member States, border deaths trigger death management systems and the information generated as a result can be found in various state and professional archives.

Death certificates are a generally reliable source of official data

Death certificates were the primary ‘access point’ to information recorded by death management systems. In general, death certificates proved to be a reliable official source of data about irregular border-crossers. As shown in Table 1, 2263 death certificates were a source for 71% of cases recorded in the Deaths at the Borders Database. For just over half of those cases, other documental sources supplement the death certificates to ensure accuracy. ‘Other documents’ includes 218 cemetery registry entries, 460 files archived by
pathologists and 1603 official communications by local or provincial authorities issued in the course of the management of a dead body. The 29% of cases sourced only from documents other than death certificates are limited to a few, exceptional locations, discussed below. Death certificates are reliably issued for deceased irregular border-crossers because recording is an integral stage of death management systems.

Accessibility of death certificates was the first of two major challenges faced in data collection because public access to state archives–even for research purposes–is not guaranteed. In Malta, Spain and Gibraltar there are standard procedures for requesting direct access to registries, but in Italy and Greece the regulations are far more vague (Pérez, Urquijo, and Last 2016; Tapella, Mirto, and Last 2016; Tselepi et al. 2016). In all countries, when access was denied, the researcher negotiated one compromise after another until the person responsible for the archives agreed. In most cases, these compromises concerned working hours and spaces. However, occasionally researchers were forced to compromise aspects of the Common Methodology in order to secure access to data.

Sometimes, particular information (cause of death) or methods of recording (no copies or only copies and no codebooks) was restricted. Where recording cause of death was restricted, this information is missing from the Database. Where restrictions affected how researchers recorded information, extra care was taken. Rarely, direct access to archives was restricted. Researchers conceded to compromises which granted them access only to index books or digital versions of the archives only if the registry had a very small archive and there were unlikely to be border deaths registered. In a few small registries, a civil servant insisted on conducting the search under the researcher’s supervision. Where compromises were made to the searching method, researchers asked to collect death certificates of all foreigners and unidentified persons and selected the border deaths among them later. Thus, deviation from the Common Methodology was occasionally necessary, but these had no impact on the number of deaths recorded and minor impact on the content of the Database.

Of the 571 registry offices finally identified as relevant for the purposes of data collection for the Deaths at the Borders Database, only 8 refused access completely. Six of these were in Spain, one in Italy and the eight in Greece. In Spain, there are five Registros Civiles which refused access where it is possible that there are border deaths registered (Marbella, El Ejido, Villajoyosa, Palma de Mallorca and Las Palmas de Gran Canaria) and one in which there are certainly border deaths registered (San Sebastian de la Gomera). According to a decision by the Consejo General del Poder Judicial, the judge responsible for each registry has the prerogative to decide whether to allow access to researchers, but refusals must be put in writing to enable appeal. Because appeals were lodged on these six refusals (still pending), no alternative sources were sought. Therefore, these jurisdictions are not covered by the Database and an unknown number of persons–unlikely to exceed 100–are missing.

<table>
<thead>
<tr>
<th>Source(s) used</th>
<th>Count</th>
<th>% of all cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death certificates only</td>
<td>1062</td>
<td>33.3</td>
</tr>
<tr>
<td>Death certificates and other documental sources</td>
<td>1201</td>
<td>37.7</td>
</tr>
<tr>
<td>Other documental sources only</td>
<td>925</td>
<td>29.0</td>
</tr>
</tbody>
</table>
During field work in Crotone province, Italy, the researcher was informed about two deaths in Cariati, Cosenza province. She was refused access by the registrar of Cariati, who claimed that there were no border deaths registered there; and instead collected testimonies and supporting documentary evidence from key actors involved in both cases. For no apparent reason, despite being found in the same area, one was buried in Cariati, while the other was buried in Mandatoriccio. Interviews with key actors in Mandatoriccio indicate, however, that these were the only bodies of irregular border-crossers found in the province.

Soufli, in the Thrace region of Greece, is a significant town along the land border with Turkey. During the Greek pilot study, we were told by many respondents that most border deaths in this region were registered in Soufli. This was confirmed by a count provided by a civil servant of the registry who searched death certificates from 2000 to 2013 (see Table 2). However, multiple attempts to negotiate access to the death registry of Soufli were unsuccessful, culminating in a formal refusal by a District Attorney of Thrace on grounds of privacy of ‘illegal immigrants’, despite a written statement by the Hellenic Data Protection Agency explicitly excluding deceased persons from the scope of data protection law. Without option to appeal, an alternative ‘access point’ was sought. Cemeteries where deceased irregular border-crossers were known to have been buried (most significantly, the private cemetery in Sidiro which, in October 2013, hosted more than 350 graves according to Imam who managed it) denied access to their archives. Finally, the pathologist of Alexandroupoli Hospital permitted data collection from his professional archive.

The pathologist archived all reports concerning bodies which he (or one of his colleagues) had autopsied, and as the only pathologist in the region, this feasibly includes all autopsies of deceased irregular border-crossers. Table 2 compares the cases in the Deaths at the Borders Database that were recorded from documental sources other than death certificates with the count conducted by a civil servant of Soufli’s death registry. In several years, the counts are the same or differ by only one or two cases. Several factors could explain minor differences in the two counts shown in Table 2. Deaths are not always

<table>
<thead>
<tr>
<th>Year</th>
<th>Count of cases in Evros missing death certificates</th>
<th>Count conducted by civil servant of Soufli registry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total count</td>
<td>Females</td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2001</td>
<td>5</td>
<td>0</td>
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<td>23</td>
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<tr>
<td>2008</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>2010</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>2011</td>
<td>41</td>
<td>4</td>
</tr>
<tr>
<td>2012</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>All years</td>
<td>281</td>
<td>28</td>
</tr>
</tbody>
</table>
registered immediately, especially if the body is unidentified, so some of the pathologist’s cases may be registered the following year. The pathologist may not be made aware of late identifications in which he does not participate; likewise, the registrar may not have been informed of an identification if the family did not ask to repatriate the body. Although we provided the civil servant clear instructions about who we were looking for, it was not possible to apply the certainty criteria to her count from the Soufli death registry, so different interpretations of a ‘border death’ may also be a factor. While the differences should raise concern about the possibility of the burial of unregistered or non-autopsied dead migrant bodies in the Evros region, we believe the pathologist’s archive was a reliable source. Its major flaw was that the pathologist’s archive only dated back to 2000. However, Soufli became the main civil registry for registering deaths only after 2000 because prior to that irregular border-crossers were typically registered in the villages where they were buried. According to the civil servant who conducted the count shown in Table 2, there were no border deaths registered before 2000. Thus, there is good reason to consider that, although the Database may not be complete for the Evros region, the pathologist’s archive provided a comprehensive alternative for the most important years of data missing as a result of the refusal of access to Soufli registry.

The research revealed a few exceptions to the general reliability of death registries as a source of official data on border deaths. Table 1 shows that 925 cases were recorded only from other documental sources; Table 3 lists the regions/provinces where these cases were recorded. The Evros and Calabria cases can be explained by the problems of access described above. Then, there are four provinces in which border deaths are not common and one or two – all of unidentified persons – were not registered by the responsible registry. In Cosenza, as explained above, access to the registry of Cariati was denied, so it is unclear whether the two deceased irregular border-crossers found in that municipality were ever registered. In the other three provinces, the responsible registry office had the information and chose not to proceed with usual registration for some reason (e.g. Huelva, Foggia and Carbonia Iglelias). Such bureaucratic obstacles and misconduct by individual registry offices also explain missing death certificates in the Sicilian provinces of Siracusa and Ragusa, and on the Greek island, Evoia. The number of affected cases in these places are larger simply because here border deaths were more common (at different points during the period 1990–2013). However, the problems unearthed with registration in Malta, Gibraltar and especially the Sicilian province of Agrigento (Italy) are more alarming because they resulted in systematic non-registration of deceased migrants.

Table 3. Cases in the deaths at the borders database missing death certificates.

<table>
<thead>
<tr>
<th>Region/Province</th>
<th>Count of cases recorded without death certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evoia (Greece)</td>
<td>15</td>
</tr>
<tr>
<td>Evros (Greece)</td>
<td>281</td>
</tr>
<tr>
<td>Malta</td>
<td>26</td>
</tr>
<tr>
<td>Calabria, Cosenza (Italy)</td>
<td>2</td>
</tr>
<tr>
<td>Apulia, Foggia (Italy)</td>
<td>1</td>
</tr>
<tr>
<td>Sardinia, Carbonia Iglelias (Italy)</td>
<td>2</td>
</tr>
<tr>
<td>Sicily, Agrigento (Italy)</td>
<td>566</td>
</tr>
<tr>
<td>Sicily, Ragusa (Italy)</td>
<td>19</td>
</tr>
<tr>
<td>Sicily, Siracusa (Italy)</td>
<td>7</td>
</tr>
<tr>
<td>Huelva (Spain)</td>
<td>1</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>5</td>
</tr>
</tbody>
</table>
In Malta and Gibraltar, it is the practice of the Public Registries to only register persons who have died in the territory of Malta or Gibraltar. This means that bodies found in the sea – including in Malta’s extensive Search and Rescue zone – can be investigated and buried without their death ever being formally recorded. The Director of the Mortuary at Mater Dei Hospital maintains, since October 2004, a list of cadavers that are brought to Malta from the sea and suspected of being irregular border-crossers, so as to allocate each cadaver a unique tracing number. The list includes details about the discovery of the body as well as the results of the forensic medical investigation and enabled us to fill gaps in data collected from the Public Registry. Like the archive of the Coroner of Thrace, the flaw of this list was that it only began in October 2004. However, Malta only joined the EU in 2004 and, according to police data, it was the first year when there were significant irregular arrivals to Malta. From several interviews and conversations, it is clear that we share a common definition of ‘border death’ with the Director of the Mortuary, which meant we did not have to deduce who to include from his list.

Most concerning of all is registration of deceased irregular border-crossers in Sicily. These represent the largest number of unregistered border deaths whose deaths were not registered, as shown in Table 3. It was immediately apparent from data collection in Agrigento province in May 2014 that there were many deceased irregular border-crossers who had been buried in cemeteries far from where their body had been found, without being registered in either place. A single, replacement secondary ‘access point’ was not an appropriate solution to this problem. Instead, the researchers adopted an exhaustive approach to data collection in the province of Agrigento. All registry offices and cemetery offices were searched for any filed documents (registers, burial permits, instructions from the Procura, coast guard reports, cadaver inspection reports, etc.) pertaining to deceased migrants. As a large proportion of those buried in Agrigento province had died near the island of Lampedusa, field work in Lampedusa was vital, particularly the extensive searches of the stato civile and the professional archives of the acting pathologist. The conclusion of this exhaustive approach was that we are convinced that we found all possible documental traces of deceased irregular border-crossers in the province of Agrigento. However, as no office systematically records border deaths, it is possible that there are people buried about whom all traceable documental evidence has been lost.

While death certificates were generally reliable as an ‘access point’ to information recorded by the death management systems of Greece, Italy, Malta, Spain and Gibraltar, problems of access and proper registration raised the need for secondary ‘access points’ in a few, specific places. The data retrieved from these places were given careful attention during Stage 2 of the research – the creation of the Database. Cases collected from different sources were rigorously compared to reduce risk of double-counting. As shown in Table 1, 1201 cases are based on both death certificates and other documental sources, more than the number of cases based solely on death certificates or other documental sources. This demonstrates not only the result of measures taken to avoid double-counting, but also the care taken to supplement data collection from registries whenever there was any doubt as to their reliability as a source of data. Therefore, we conclude that the effects of the problem of gaining access to death registries and the problem of non-registration of border deaths on the quality of the Database are limited, both geographically and substantively.
Who and what is in the database

Many people who have died attempting to cross the Southern EU external borders are missing or their bodies have been found and buried in other jurisdictions. Therefore, their data are not included in the Deaths at the Borders Database and, as a result, the Database does not present a total count of ‘border deaths’ along the EU external borders. However, for the people whose bodies were found and processed in Southern EU Member States, we were able to retrieve more information than we had anticipated or aimed for because death records proved to be a rich source of detail in many cases. The evidence collected is organised into 48 variables, including 12 variables of procedural information, 10 variables about personal details and 15 variables concerning the place, date, cause and circumstances of death.28

In some places, border deaths were registered quite differently to other deaths, especially in terms of the information provided in death certificates. Often, although not always, information was missing because the person was unidentified. But the fact that two thirds of the persons recorded in the Database are unidentified does not explain all the data gaps as personal details should be replaced with other details such as a description of and where and how the body was found. Whatever the cause, the consequence is a huge variation in the kind and completeness of information available from death management systems about persons who died border deaths.

This variation in the information available contributed to the second major challenge faced in data collection: identifying border deaths. Researchers collected data on all cases they found that could fall within the working definition. While some were clearly border deaths and others not, many were ambiguous due to insufficient or contradictory information. Systematic comparison of the deaths collected with those recorded in UNITED’s List of Deaths and the Fortress Europe blog helped to ‘confirm’ some but not all cases. Criteria were developed on the basis of the raw data collected to assign each case one of five levels of certainty as to whether or not the person had died a border death: confirmed, likely, possible, unlikely and automatically excluded.29 Table 4 provides the breakdown of cases per level. The confirmed, likely and possible cases were published in the public version of the Database along with their certainty level. Finally, 959 of the 4147 cases that had been collected were not included in the Database. Classifying certainty post-collection lends consistency to the somewhat intuitive deductive process of identifying border deaths in the field.

Effect of researching border deaths

The morose subject of the research had more of an impact on the researchers than anticipated. The risk of vicarious traumatisation30 became apparent after the Greek and Spanish pilot studies and was included as a topic of discussion in the Methodology Workshop. In

<table>
<thead>
<tr>
<th>Certainty level</th>
<th>Count</th>
<th>% of cases included in Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed (1)</td>
<td>2025</td>
<td>63.5</td>
</tr>
<tr>
<td>Likely (2)</td>
<td>447</td>
<td>14.0</td>
</tr>
<tr>
<td>Possible (3)</td>
<td>716</td>
<td>22.5</td>
</tr>
</tbody>
</table>
addition, researchers were invited to share their personal experiences in the logbooks, either in words or by indicating on a scale of 1–10 how data collection was affecting them. Due to the volume of data submitted and the prioritisation of overcoming obstacles to data collection, it was not always possible to read or respond to the material submitted in this regard. Each researcher established their own norm on the 1–10 scale, which was monitored to enable quick communication of a particularly challenging registry or period, to be followed up with a personal email or Skype call to that researcher. Researchers in Italy and Spain, who were collecting data full time for 10 months, scheduled breaks to provide relief from the subject and the travelling. Finally, a two-day Debriefing Workshop was organised in Madrid in February 2015, which included an informative session on vicarious traumatisation by a psychotherapist. These efforts were sufficient to ensure completion of data collection and raise awareness of vicarious trauma, but inadequate to prepare researchers for exposure to the traumatic experiences of irregular border-crossers and support them through periods of high stress. The well-being of researchers exposed to traumatic ‘data’ deserves more attention in academia.

**Conclusions**

The Deaths at the Borders Database is the first longitudinal and geographically comprehensive collection of official evidence about deceased irregular border-crossers in EU Member States. Due to the comprehensive, flexible and methodical approach and the dedication of the research team, we are satisfied that the Database includes every deceased irregular border-crosser recorded by the death management systems of Greece, Italy, Malta, Spain and Gibraltar, except those few places we were unable to search. The Database provides a reliable minimum of the number of irregular border-crossers who have deceased between 1990 and 2013 and the information it contains contributes to knowledge of irregular migrant populations in the EU.

Death management systems have limitations as to the information they can provide about people who have died border deaths. First, only people whose bodies have been processed in the jurisdiction of the particular system will be recorded by it; second, there is considerable variation in the kind and amount of information recorded for each body. Nonetheless, for close to three decades, recovering the dead bodies of irregular border-crossers has triggered a series of procedures involving multiple state authorities, generating a wealth of official data that states could centralise and make accessible for identification and family notification, and for impact assessments and policy review (Last, Spijkerboer, and Ulusoy 2016). Data about deceased irregular border-crossers continues to be recorded at the municipal and provincial levels of state government due to the entrenched and automatic nature of the death management systems that have operated since the 1800s. This is also true of the death management systems of countries such as Morocco and Turkey. So, the same methods of data collection could be used to extend the Database to other jurisdictions in which ‘border deaths’ occur.

Death certificates are a reasonably accessible document from which to gather official data generated by death management systems. If completed properly, they provide a rich summary of personal, procedural and death-related information. Their limitations as a source stem from their accessibility and instances of improper registration. In many places, state officials and civil servants simply need to be reminded of the duty to
investigate and record all deaths and of the details that should be included in a death certificate if the person is unidentified (Last 2016). In a few places, the local authorities should adjust the way they record border deaths immediately, either by implementing existing regulations (in the case of wayward registries in Greece and Italy, especially in the Sicilian province of Agrigento) or by changing their regulations to enable the deaths of irregular border-crossers to be registered (Malta and Gibraltar).

In addition to providing insight into how deceased irregular border-crossers are managed in the EU, the Deaths at the Borders Database provides new data to triangulate with counts sourced from news media and thereby improve the accuracy of existing estimates and mortality rates. As shown in Figure 4, the Database reveals a different trend in fatalities over the period 1993–2013 compared to those of UNITED’s List of Deaths and the Fortress Europe blog, raising questions about the impact of media attention on the reporting of border deaths. The detail of the Database provides the opportunity to conduct a case-by-case comparison of these datasets, which may go some way to answering those questions.

By releasing the Database open source as soon as it was compiled, the information collected is accessible to the research community, civil society and policy-makers. Data are presented in an individualised way, placing emphasis on each person and what became of their body. In this way, the Deaths at the Borders Database contributes evidence to a current, highly politicised issue in the EU and a reminder of a disturbing part of the picture of irregular migration that we are too easily inclined to dismiss.

Notes

1. The term ‘border deaths’ is subject to the interpretation of ‘border’. This study uses ‘border’ to refer to the physical external border lines of the EU, including the high seas between southern EU Member States and North and West Africa. Others interpret the term more expansively (Weber and Pickering 2011).
5. Death registries are organised chronologically and sometimes also alphabetically by surname, but not by legal status or nationality.
7. Two of the 13 researchers joined the study after data collection had commenced and were trained in the field by experienced researchers.
8. We encountered only one civil registry where a special index was kept of migrants and it was done at the personal initiative of the registrar. She explained that she believed that someday, someone would want to have that information.
9. One researcher from each study country.
11. An update was published on 28 June 2016 with irregularities removed and functions added to increased useability. See Supplemental Files.
12. The estimates from UNITED and the Fortress Europe blog have been adjusted to fit with the interpretation of ‘border death’ used for the Deaths at the Borders Database, excluding persons who died on their way to the EU external border or after arriving in the EU (e.g. in detention or during deportation).
13. These record far fewer details about the deaths.
14. These are more difficult and time consuming to search as the operating programs do not have adequate search functions, which may have increased the possibility of human error.

15. Supervision could be direct (watching the search), or instructive (explaining the methodology).

16. Decision dated 1 April 2014; on file with author.

17. Email communication with field researcher, September 2014; on file with author.

18. On file with the author.

19. Recorded by the pathologist but not any registry.

20. Recorded by Soufli registry but missing from the pathologist’s records.

21. The one buried in Mandatoriccio was not registered in Mandatoriccio, but as his body was found in Cariati, his death could be registered there.

22. The judge in Huelva had forgotten to instruct the registrar to complete a death certificate. The access request reminded him of the forgotten case file in his office. This mistake may have been corrected since data collection.

23. The registrar of Lesina was waiting for a direct order from the procura to issue a death certificate because the burial authorisation he received (which is the usual means of communicating this order) stated that the investigation was ongoing.

24. Only parts of these bodies were found and the registry in Carloforte had taken it upon itself to keep a separate file of documents relating to incomplete, unidentified ‘human remains’.

25. In Noto, the registry kept a separate file of ‘unknown’ persons in the belief that deceased persons could not be issued death certificates until they were identified. In Pachino, there were three unknown bodies buried in the cemetery which were not registered in Pachino stato civile; one of which had died off the coast of Portopalo. It is not clear why these three were not registered when others were.

26. The registry of Scicli did not register two unidentified bodies found near Donna Lucata in December 2004 nor the unidentified persons among the 26 victims a shipwreck near Sampieri on 18 November 2005, although all were buried at the Scicli cemetery. No explanation for this differential treatment of unidentified bodies was provided by the registrar.

27. In the municipality of Kymi, the Mayor declared that the ‘illegal immigrants’ who died in shipwrecks off their coast should not be registered or buried there, and the registrar obliged, in contravention of Greek law pertaining to death registration. Although many actors remembered these deaths, we could not discover where the bodies had finally been buried; the only documental evidence remaining of these deaths were the operational reports of the Coast Guard. Such operational reports are rarely archived for long and they are not publically accessible; it was only because the researcher could prove the deaths were not recorded anywhere else that she was able to get permission to consult the Coast Guard’s archive.

28. See Supplemental File entitled “Metadata for the Deaths at the Borders Database for Southern EU”.

29. See Supplemental File entitled “Criteria for Assignment of Certainty Levels in the Deaths at the Borders Database”.

30. Also referred to as secondary traumatisation, vicarious traumatisation is commonly linked with compassion fatigue and burn out, as well as indicators of post-traumatic stress syndrome. Although individual researchers may be aware of it, there is no professional acknowledgement of the risk of vicarious traumatisation in academia which is why it was absent from the original research design.

31. The session provided general advice related to the research on: factors that might make individuals more susceptible to trauma, how to recognize possible symptoms and what effects vicarious traumatisation can have on emotional states, relationships and decision-making. The aim was not to diagnose or treat the researchers, but to raise awareness.

32. The Deaths at the Borders Database covers 1 January 1990 to 31 December 2013. However, in Cadiz (Spain), we found death certificates of people who we suspect died border deaths as early as 1987.

33. As the Parliamentary Assembly of the Council of Europe has acknowledged: PACE Resolution 2088, para 12.1.2.
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References


