Rosstat data reveal 500,000 war deaths — and the data is genuine

Including the missing, the figure today is about 700,000

Mediazona, 23 November 2026

Unofficial English translation of Mediazona's analysis of the leaked Rosstat death records, a joint project with Meduza. The named list of the dead is the work of Mediazona, BBC News Russian and a team of volunteers. Charts are translated from Mediazona's originals; their data is unchanged. Translator's notes are at the end.

By the end of September 2026, at least 490,000 people had been killed in the war with Ukraine. These are people whose deaths have already been registered and appear in the data from the Rosstat hack, which Belarusian and Ukrainian hackers (Cyber Partisans and Silent Crow) passed to journalists.

We are confident the data is genuine: it checks out against the named list of the dead (including entries not yet published), the Probate Registry, other leaks from civil registry offices (ZAGS), the texts of court rulings from open sources, and data previously published by Rosstat itself.

Rosstat's data also allowed us to recheck our earlier loss estimates based on the Probate Registry, and we found that they were fairly accurate, or even too low when it came to the missing in action.

Allowing for delays in death registration, we estimate the real number of dead as of September at around 700,000.

This is a joint piece with Meduza, part of our project on estimating mortality. The named list of the dead is the work of Mediazona, BBC News Russian and a team of volunteers.

Cyber Partisans and Silent Crow announced the Rosstat hack on 1 November. They gained access not only to the website but also to the internal networks, and downloaded terabytes of data, including mortality data that has not been published since mid-2025. On 8 November they handed this data over to journalists.

Together with other media outlets, we received a database of 29.7 million records: almost every death registration in the EGR ZAGS system from the start of 2021 through August 2026. Rosstat received this data in anonymised form: each record had the person's demographic details filled in, but no name.

What is EGR ZAGS?

It is an information system through which civil registry offices exchange information on births, deaths, marriages and divorces. Its creation was initiated in 2016, and the system went live in October 2018. The EGR was developed by Russia's Federal Tax Service (FNS).

On 15 November the hackers handed journalists another batch of data: 15 million more recent records from SMEV (the System of Interagency Electronic Interaction), covering death registrations up to 29 September 2026. Outlets that published mortality estimates based on the first batch of the leak only had access to data up to August, so their figures may differ.

The source data contained many versions of the same record, as well as duplicates and corrected entries, so processing it was not a simple task. After processing the two databases and removing errors and duplicates, we ended up with 11,658,178 unique death records. This count may still

contain a small number of duplicates, for example where records are incomplete or contain errors.

More on the source data format, duplicates and how we merged them

In the original, this is an expandable section.

The death data comes from three sources. The first is a copy of a Rosstat MongoDB database called deathFacts, which stores anonymised death records. The hackers obtained it at the outset, when they broke into Rosstat's internal network, and its data runs to early August 2026. The second is a separate export from the same database that accumulated while the hackers had access to the network; however, it only includes deaths up to the end of August. The third source is a copy of the PostgreSQL database of the System of Interagency Electronic Interaction (SMEV), into which deaths kept arriving until the hackers lost access at the end of September 2026.

It was through SMEV that Rosstat received already anonymised "raw" records from the Unified State Register (EGR), which holds all civil-status records of Russia's registry offices. Data transfer to Rosstat via SMEV was introduced in June 2023; before that, Rosstat apparently received data monthly as ordinary spreadsheets, separately for each region. Once SMEV was in place, Rosstat's internal database filled automatically, and the records underwent additional processing: for example, some fields were dropped and some empty fields were filled in. For instance, if SMEV had a dash in place of the exact day of death, Rosstat entered either the first of the month or the date of the death record itself.

In total, this gives us 29.7 million records in MongoDB from 2021 to the end of August 2026 (the database holds only about 100,000 records for earlier years) and 15 million "raw" records from June 2023 to the end of September 2026.

Records are by no means unique deaths: practically every death has several versions. In most cases the versions reflect some data being clarified or empty fields being filled in, such as the cause of death being refined or previously unknown dates being added. MongoDB has about 11.7 million unique numbers; SMEV has 6.7 million.

We kept only the latest current version, which is usually the most complete. Sometimes a record has no current version, and its latest version is marked in the database as withdrawn; there were about 286,000 of these. This usually means the death was entered into the database outside the "reporting period" and was not used to compile statistics. In 23,000 cases, using dates of birth and death, place of birth or the death document number, we were able to find a new record replacing the withdrawn one. In all the remaining 263,000 cases, we kept the withdrawn version as evidence of a unique death.

The records in the two databases overlap: SMEV adds about 210,000 new records and 60,000 new versions of records already in the database.

In principle, a death record should have a unique number: the 21-digit civil-status record code, which has a strict structure. First comes the "EGR section", which is always 1 for records. The second digit indicates the type of record: birth, marriage, divorce, death and others; for deaths it is always 7. The next three digits give the year of the record, the following 8 the number of the registry office department or body that issued it, and another 5 the serial number of this type of record at that department for the year (for example, the first death this year at a given department will be recorded as 00001). The 19th and 20th digits are the "additional attribute", and the last digit is a check digit.

The "additional attributes" describe the conditions under which the record was made: for example, digitisation of a paper version, lack of access to the online version of the records database, and similar situations. As a result, the same death can end up registered with the same serial number but a different 21-digit number, differing only in the last three digits: the additional attribute and the check digit. We merged records with identical 18-digit stems that also matched on dates of birth and death and on sex: 375,000 records turned into 152,000 unique deaths (usually 2 or 3 versions of the same death, but in one case 4).

In practice, it is not unusual for a registry office, for whatever reason, to issue two original records (00 in the additional attribute) with the same serial number. Then, when one of them is entered into the online database, it may be given a different code, such as 10. In that case, conversely, two different deaths will share everything except the last three digits. In Rosstat's database we even found that different versions of the same record, under one and the same number, could contain different people. In some cases we managed to find new records for the people "overwritten" by later versions, but in about a thousand cases we had to keep two different deaths with the same record number.

Separately, we merged duplicates where the same death was re-registered at different registry offices. This happened on a mass scale with deaths originally registered at Rostov registry offices, and with deaths declared by a court. In general, the pair "date of birth + date of death" identifies a specific death fairly well: in most cases each pair occurs once or twice, very rarely five times, and only in isolated cases more often (usually when the full date is unknown and was recorded as the first day of the month or year). As a rule, any one additional matching attribute then makes the identification unambiguous: matching place of birth, death document number (allowing for a one-character typo), place of death, or name, if known. Many records were transferred to a "home" registry office; in that case the record date is usually given as the first day of the month, and the region of the death document matches the region where the record was originally registered. The death notice number on its own is not unique and is only used together with other attributes. This merged about 6,000 more records.

In the end we arrived at 11,658,178 unique deaths. This count may still contain a small number of duplicates, for example where records are incomplete or contain errors. Or it may wrongly merge the rare cases of twins who died at the same time, where Rosstat has no information on the documents confirming death.

We also had to make some adjustments and restore some data from the SMEV database that was missing from Rosstat's database. First, this concerns incomplete dates. For some deaths, Russian registers record only the month, or even only the year, of death. Rosstat filled these in, assigning the death to the first of the month or even to 1 January of the year. We added flags marking such dates as incomplete. In roughly 11,000 cases, Rosstat's database contained a flag saying the record had been shifted by one year in both date of birth and date of death. We don't know why this was done, but we restored the original dates.

The "occupation" field in the SMEV database deserves particular attention. There it is a text field describing the person's place of work, whereas in Rosstat's database it is coded as a number, as in death notices. Military service, for example, is coded as 5. However, from July 2025 SMEV slightly changed the text wording, and Rosstat stopped automatically assigning code 5 to such deaths, putting 11 ("other") instead. At the same time, many war-related deaths in SMEV stopped having any occupation listed at all. We restored "military" occupation from SMEV for deaths where at least one version mentioned military service, but this is impossible before 2023: before the switch to SMEV, Rosstat gave many "military" deaths occupation code 10, "unknown".

Rosstat is missing data from some registry offices

There are around 20,000 deaths from the named list, the Probate Registry and the ZAGS leaks that we could not find in the Rosstat leak. All of them fall between 2022 and July 2023.

12,000 of these records are deaths from three registry offices in Simferopol. They are split roughly evenly between men and women, and almost none of them bear markers of military personnel.

The second category is deaths from registry offices in the DNR and LNR: more than 3,000 records. A significant share of them are men from Wagner PMC who are already known to us and were killed in Bakhmut.

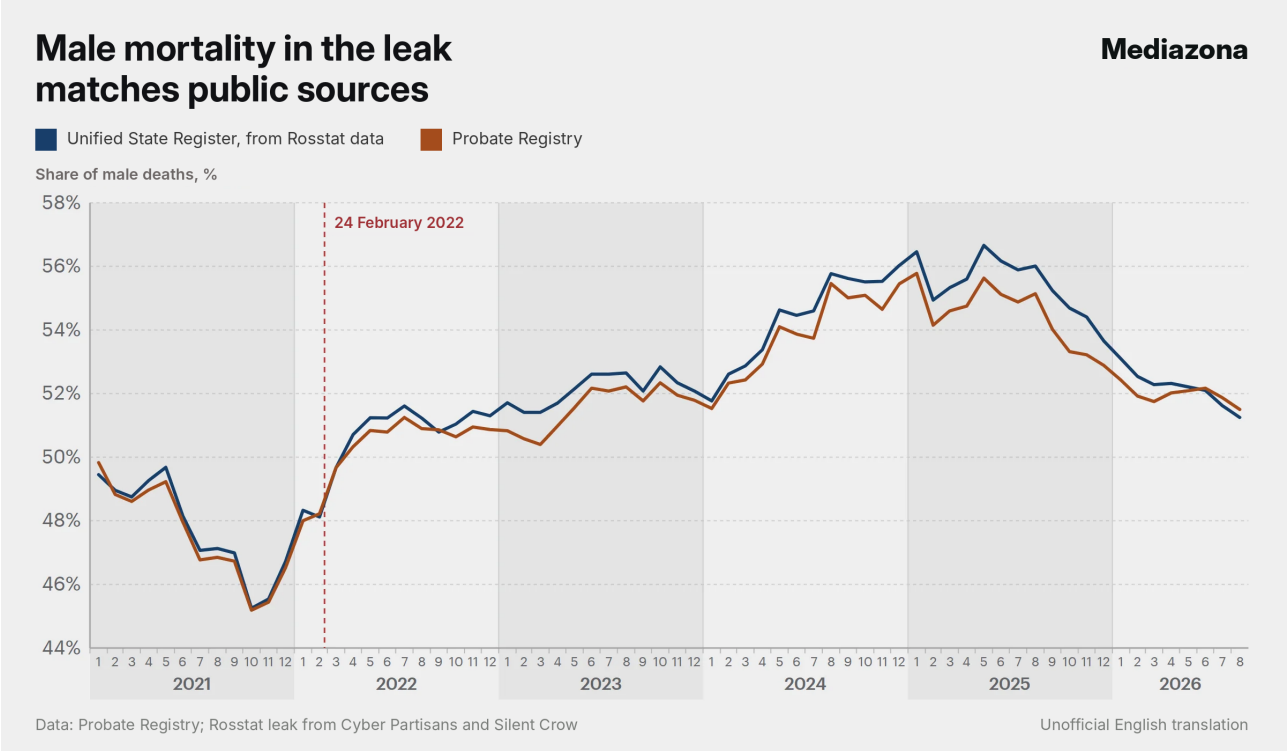
The remaining deaths are spread across registry offices in Russian regions. Two Rostov offices lead the list, Kirovsky and Oktyabrsky, which specialise in military deaths: around 300 male deaths from them are missing from Rosstat, and every one of them concerns military personnel.

In total, then, there are around 3,000 war-related deaths we could not find in the Rosstat leak. All of them date from 2022 and early 2023, and most are men killed in Bakhmut. This is why our named count sometimes exceeds the Rosstat data for that period.

In July 2023 Rosstat switched to SMEV (the System of Interagency Electronic Interaction), and from then on the data from Rosstat, the Probate Registry and the ZAGS leaks match almost completely. Minor discrepancies come from things like deaths being re-registered or errors being corrected.

We found probate cases for 7.1 of the 11.6 million records in the Rosstat database (61.1%). That share is consistent with the shares we got earlier when we compared the Probate Registry with Rosstat's official mortality figures. Where probate is concerned, the age groups in the Rosstat leak behave as expected, and coverage changes with age: the older a person, the more property they have, and so the more likely we are to find them in the Probate Registry.

In total, by combining our named list of the dead, the Probate Registry and the ZAGS leaks, we de-anonymised 10.1 of the 11.6 million Rosstat records (86.8%). None of the sources contradicted one another, apart from minor discrepancies caused by errors, corrections or different rules for handling incomplete dates.



The leaked data for 2021 matched the Short-Term Mortality Fluctuations database (RuSTMF), which a group of demographers at the Higher School of Economics compiles from Rosstat data. It gives mortality rates rather than total numbers of deaths, but using Rosstat's own population publications, the death counts can be reconstructed from the rates to within single deaths. What sets this database apart is that it holds the most detailed statistics available: deaths are published by five-year age group, by every week, by sex and by region.

If you build all 8,365 data points on that basis, drop people of unknown age (RuSTMF doesn't include them), keep only records that made it into the final statistics for the year (rather than being added later), and account for the fact that Rosstat assigns people with an unknown date of death to the first day of the month their death was registered, the cells match to within single digits.

Completely falsifying this volume of data is impossible, especially since it is checked not only against leaked databases or the work of Mediazona and the BBC, but also against the official, publicly available Probate Registry and Rosstat's own previously published statistics.

We also checked several other scenarios of possible data manipulation.

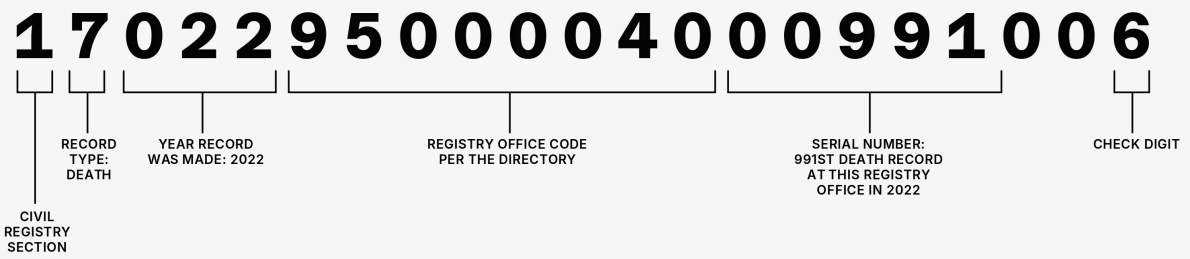
What if hundreds of thousands of military deaths were injected into genuine data?

There are two arguments against this: the structure of the data itself, and verification against the Probate Registry and other external sources. The first makes an injection very difficult; the second makes it practically impossible.

Every death registration has a unique record number; in the database this field is called fact_id, which we already mentioned in the expandable section on how we worked with the data. Its format is set by Ministry of Finance Order No. 202n. The number encodes the record type (7 = death), the year the record was made, the registry office department number, the record's serial number at that office for the year, and a check digit.

Mediazona

How death record numbers are structured



Unofficial English translation

The database follows this system. 99.9% of the numbers comply with the order: the year in the number matches the year of registration, the registry office code was issued according to the rules, and the check digits are correct. Repeated serial numbers within the same office and year are practically non-existent. The few that do occur are explained by how the state agencies themselves work: for example, a record is reissued with a different service code (00 → 10) when a paper certificate was issued and then corrected. A forgery would have to reproduce not only the rules but also these inaccuracies.

The serial number works simply: from the start of each year, every registry office numbers its death records from one, in order of registration. If an office registered record No. 101 on 10 January, record No. 102 will appear on the same day or later, and record No. 100 on the same day or earlier. Record No. 100 cannot be registered on 11 January, nor record No. 102 on 9 January. This order holds even for late death registrations and has nothing to do with the actual date of death: if someone brings an office the details of a person who died in 2025 for registration today, the record still gets the next 2026 serial number in today's sequence.

To check whether the data in the leak is organised the same way, we took every record with a registration date from 2022 onward, found its neighbours by number in the same office and year, and checked whether the correct order holds. It holds for 99.88% of military records that are not on Mediazona's list (the candidates for injection), and for 99.61% of civilian records of men of the same age. Here, "military" meant death records of men aged 18–64 after 24 February 2022 with a military cause of death or a military occupation. The small remainder consists of corrections, restored records, and registration dates that, before the switch to SMEV, were rounded to the first of the month.

For a would-be injection, this means the numbering system would have to be rewritten from scratch. A fake record needs a number, and there should be practically no free numbers: under the Finance Ministry order they are issued consecutively, one per registration (barring errors). One could assign a number already taken by a genuine record, but then the database would contain hundreds of thousands of duplicates that could not be explained by transferred records or error corrections.

One could add records at the end of the year, where there is room after the last genuine registered death. Registry offices sometimes do this themselves, but only for registrations of people who are clearly civilians. To pull this off at scale, one would have to either break the date order, creating thousands of records in December that were registered throughout the year but

carry December serial numbers, or create solid blocks that are easy to spot. There are none: military registrations come in small clusters, as happens when the documents for several dead servicemen are submitted together, and for military deaths not on the list these clusters look the same as for those on the list.

The idea that the internal numbering was rewritten to make room for injected records is refuted by court rulings whose texts cite death record numbers.

In court rulings we found 3,376 record numbers with a record date between 2021 and 29 September 2026, i.e. within the period covered by the dump. Of these, 3,275, or 97%, were found in the Rosstat leak. Of the 101 that were not found, 42 have an obvious typo in the text of the ruling: the check digit or the year doesn't add up. The remaining 59 are concentrated in a few registry offices in Penza Oblast, Mordovia and Kamchatka, and mostly date from 2021. These are probably re-registrations under different numbers.

The death records found this way also match the rulings in content. The record date matches exactly, or, for records before mid-2023, when dates in the database were rounded, to within a month. The name of the deceased, where it appears in both the ruling and the database, matches in 95% of cases; the discrepancies are mostly explained by typos and by the ruling naming a relative.

The second independent check is the Probate Registry, mentioned earlier. Injecting data into the Rosstat dump would mean that not a single probate case would exist for hundreds of thousands of invented servicemen, and that is not the case.

Finally, we ran a third check: we took the data of 1,765 servicemen with a known date of birth and date of death who are known to us but not yet published on the "Russia 200" project website. The same 95% were found in Rosstat as for those already published, which means the database was not padded out using our named lists.

What if the data is genuine but was poisoned, with hundreds of thousands of ordinary records having their cause of death changed to a military one?

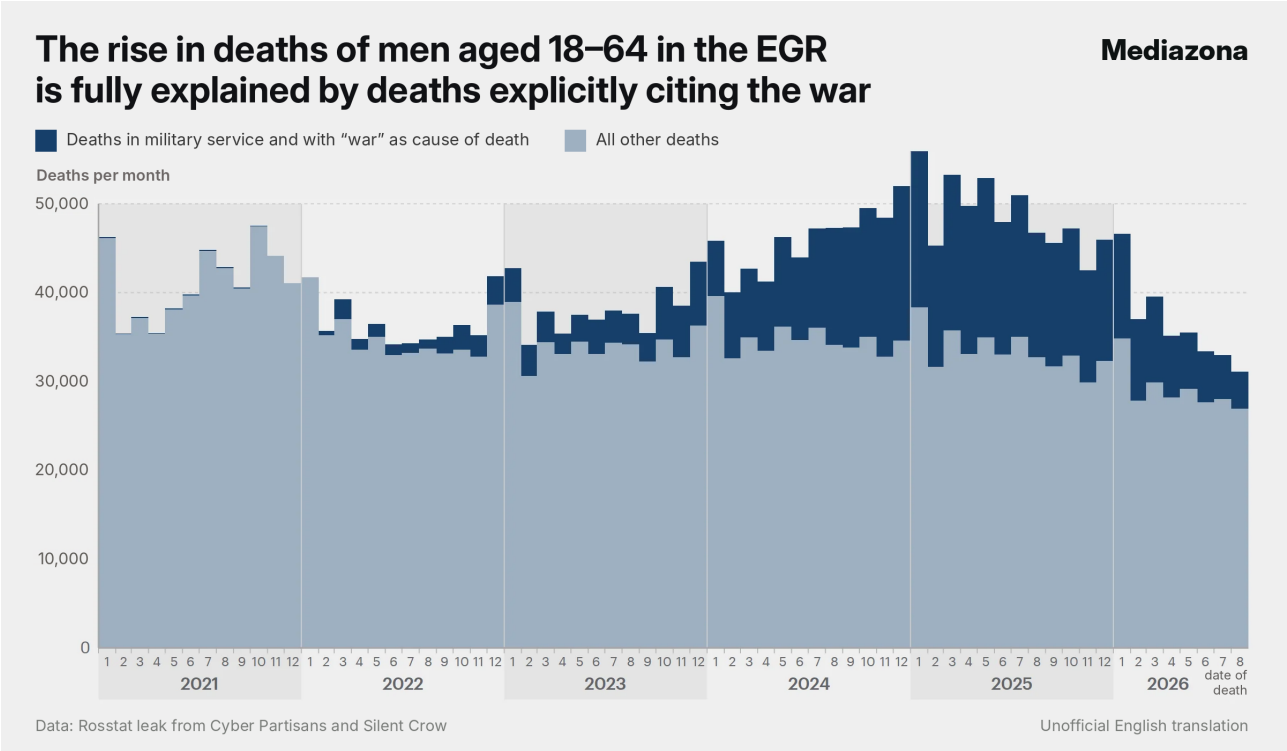
At first glance, this is a craftier method than a simple injection, and harder to check. In fact it isn't: it is easy to spot, and, most importantly, the data still contains too many male deaths as such, and rewriting causes of death does not explain where they came from.

Since this scenario does not involve injecting new records, the total number of men who died stays the same. That means military deaths could only be created out of existing deaths from all causes (illness, murder, accidents), and so the number of men who died of non-military causes would have to fall. This is easy to check through the ratio of male non-military mortality to female mortality, and nothing of the kind is seen in the data.

In theory, one could account for this as well, changing not only records' cause of death but also their sex, turning women into men killed in the war. But then the structure of female mortality (for example, the ratios within age groups) would have changed once the edits began, and that isn't in the data either.

Besides, all of this would show up immediately when reconciling the Rosstat data with the Probate Registry: probate cases for women would be attached en masse to the falsified military deaths, and that doesn't happen.

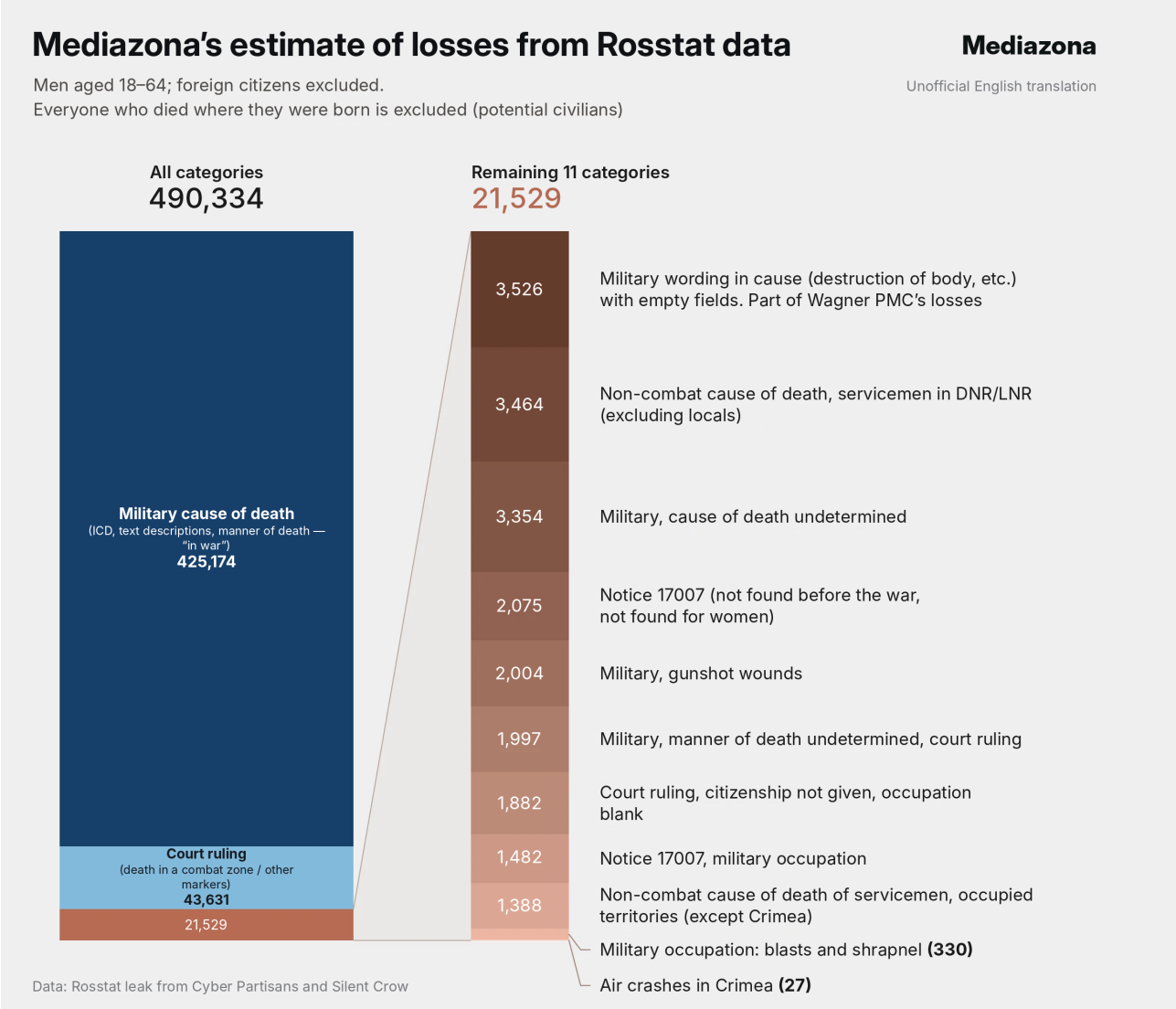
The most important argument that such tampering would be pointless is that in this scenario there is simply nowhere to get the extra death records from. The excess male mortality in the data is too pronounced, and other categories of deaths don't fall nearly enough to explain it.



How we found 490,000 dead in the data

Rosstat's data has no single, all-encompassing field for "serviceman killed in the war with Ukraine", but there are fields that point to it, explicitly or less so.

We count as military only Russian citizens (or people with no citizenship listed, but not foreigners), men aged 18 to 64.



The basis of the estimate is records with a military cause of death: an ICD code denoting injuries resulting from military operations, military wording in the cause of death, or "military operations" as the manner of death on the medical certificate form (digit 6). That is 425,000 records.

The hackers from Cyber Partisans used the same method; on the August data they arrived at 380,000 people.

The second-largest category is about 45,000 people declared dead by court ruling, i.e. those who had been considered missing in action. Such records contain no cause of death, so we decided by place of death. If the death occurred in the combat zone, the record is included in the estimate. If no place was given, we decided by citizenship: with Russian citizenship, the record is included.

We also singled out another category of court rulings, based on the named list, where very little data is given but the people are nonetheless military. Court rulings that clearly name any place other than Ukraine are excluded.

Another roughly 20,000 records were selected using additional markers that the main filter doesn't catch:

- military service in the occupation field combined with blast or gunshot wounds, an undetermined cause of death, a court ruling, or a death notice;

- a death notice instead of a medical death certificate where the manner of death is undetermined;
- characteristic combat wording ("shrapnel wound", "charring of the body") in records with empty personal-data fields. This is the part of Wagner PMC's losses near Bakhmut that made it into the registry offices.

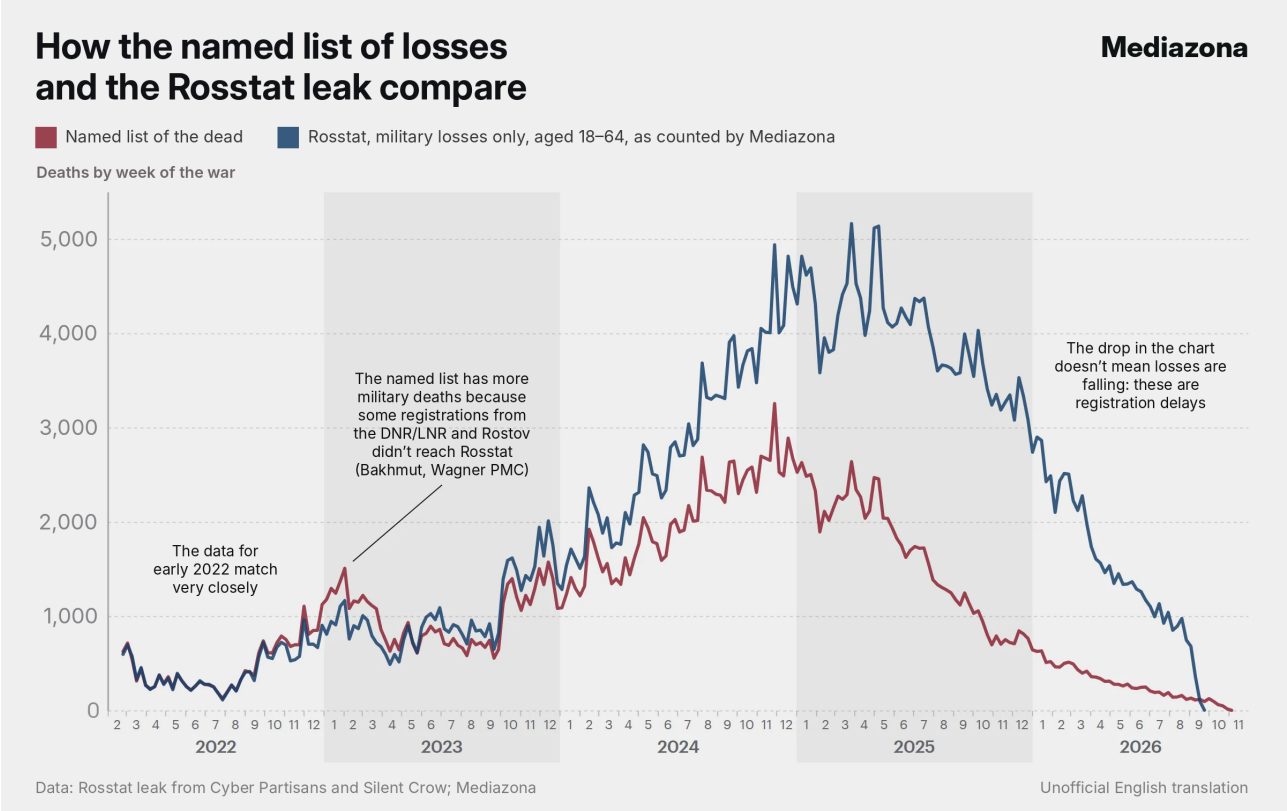
Separately, we included servicemen who died of illness or accidents, such as pneumonia or a heart attack, if the death occurred in the war zone. In territories where fighting began in 2022 (Kherson, Zaporizhzhia and Kharkiv oblasts, etc.), all such cases are included.

In the DNR and LNR, only incomers (servicemen not born there) are included: a local serviceman could have served there and died of an illness unrelated to the war. Crimea is excluded entirely, since Russian troops have been there for a long time, and perfectly ordinary peacetime deaths of soldiers from non-combat causes are possible there. Russian territory is excluded from this count entirely.

To exclude civilians killed in shelling (they also have military causes of death), we applied a filter in the eight regions where they are concentrated: the DNR, LNR, Zaporizhzhia, Kherson, Belgorod, Kursk and Bryansk oblasts, and Crimea. A record with a military cause of death but no military service in the occupation field is excluded if the person was born or registered as a resident in the same region where they died, and also if neither place of birth nor registered residence is given. The filter catches 95% of visible civilians.

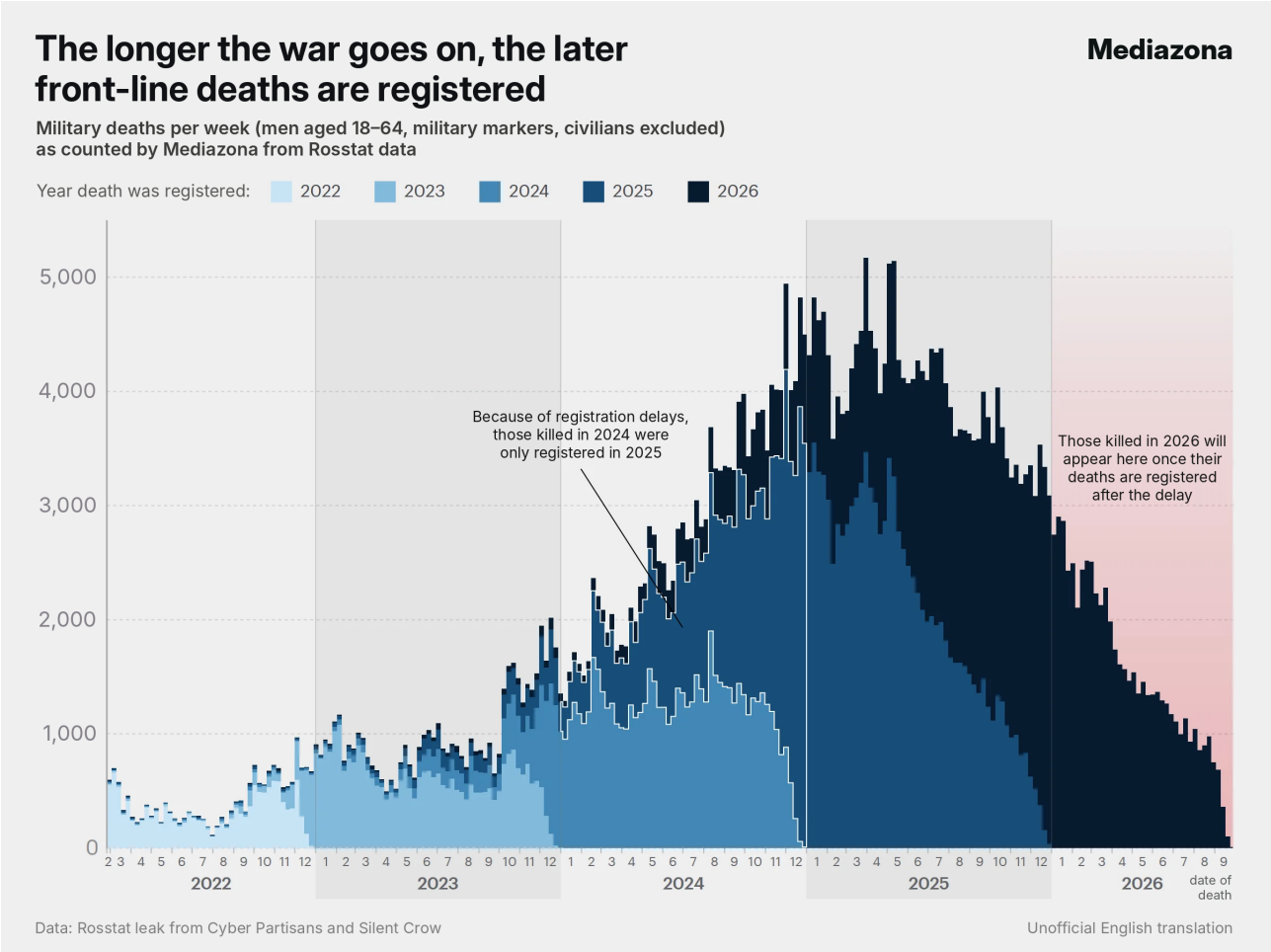
The filter was tested on peacetime data, on women and the elderly, on individual registry offices, by age and by place of death. The potential upward error (capturing extra records) is about 0.7%.

At the same time, we see almost none of the DNR/LNR people's militia losses in 2022 (they are either simply absent from Rosstat or distributed in a way that makes them impossible to find).



Deaths not yet in Rosstat: an estimate as of today

Another very characteristic feature of military deaths is the delay in registering them. This is best seen on the chart.



The longer the war goes on, the more military deaths are registered with a delay of a year or more: the chart shows, for example, that Rosstat may not yet have fully captured 2025. This means that the data as of the end of September (however honest and genuine it may be) does not reveal the real number of dead.

Our colleagues at Meduza have produced an estimate of losses as of today: more than 700,000 people.

By registration date, death records fall into three broad categories.

Civilians are usually registered quickly (within 2–3 days). For servicemen, delays are measured in weeks and months, up to six months. And there is a separate category of ultra-late registrations (more than six months between death and registration): most of these are people who were considered missing in action and were declared dead by a court or on the basis of a death notice.

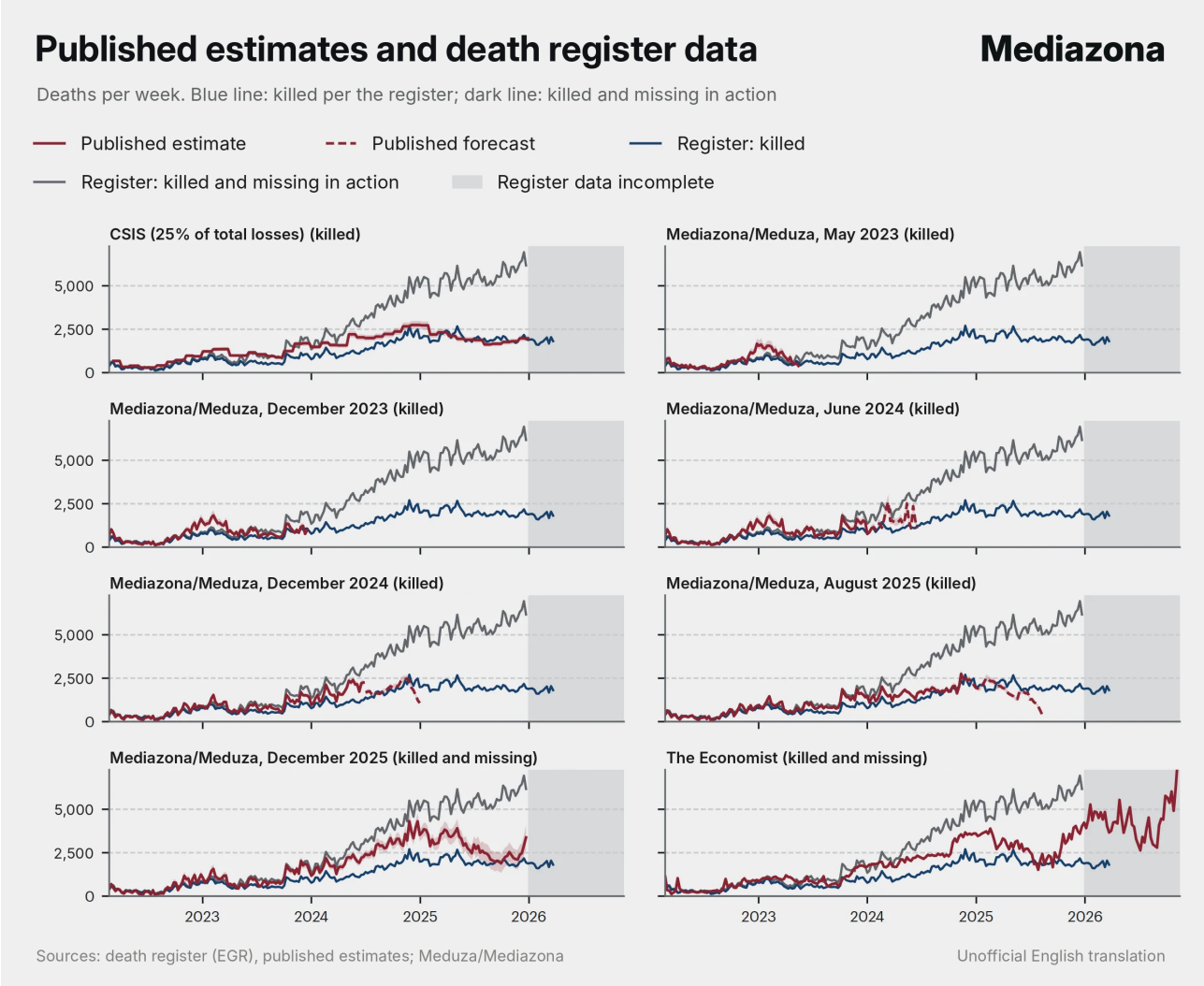
This last category is the hardest to estimate, and since 2025 it has made up an ever larger share of losses.

Since mid-2025, the total number of registrations delayed by more than a year has been 50 times higher than before the war. The May 2026 update of the Probate Registry estimate managed to account for this only partly, using court statistics on declarations of death. These made it possible to estimate the number of ultra-late registrations up to mid-2025, but at the end of 2025 the

courts stopped publishing them. As a result, the estimate became a "hybrid", and from the start of 2025 the missing were systematically undercounted.

How our estimates and others matched reality, and where they didn't

If you look at the charts comparing every update of our Probate Registry study with the data in the EGR, you can see that they track the weekly rises and falls among the regular dead quite accurately. But the same estimates start missing badly once the missing in action begin to make up a significant share of total losses.



Using court statistics helped solve this problem in the May update, but only partly. The systematic undercount of the missing begins at the start of 2025.

The standard method, carrying the distribution of registration delays over from the past to recent months, doesn't work here, because that distribution itself changed over time. In 2023, government resolutions No. 1421 and No. 434 simplified and expanded the issuing of notices for the missing in action, and registration sped up. Separating such shifts in registration speed from changes in the number of deaths requires additional data.

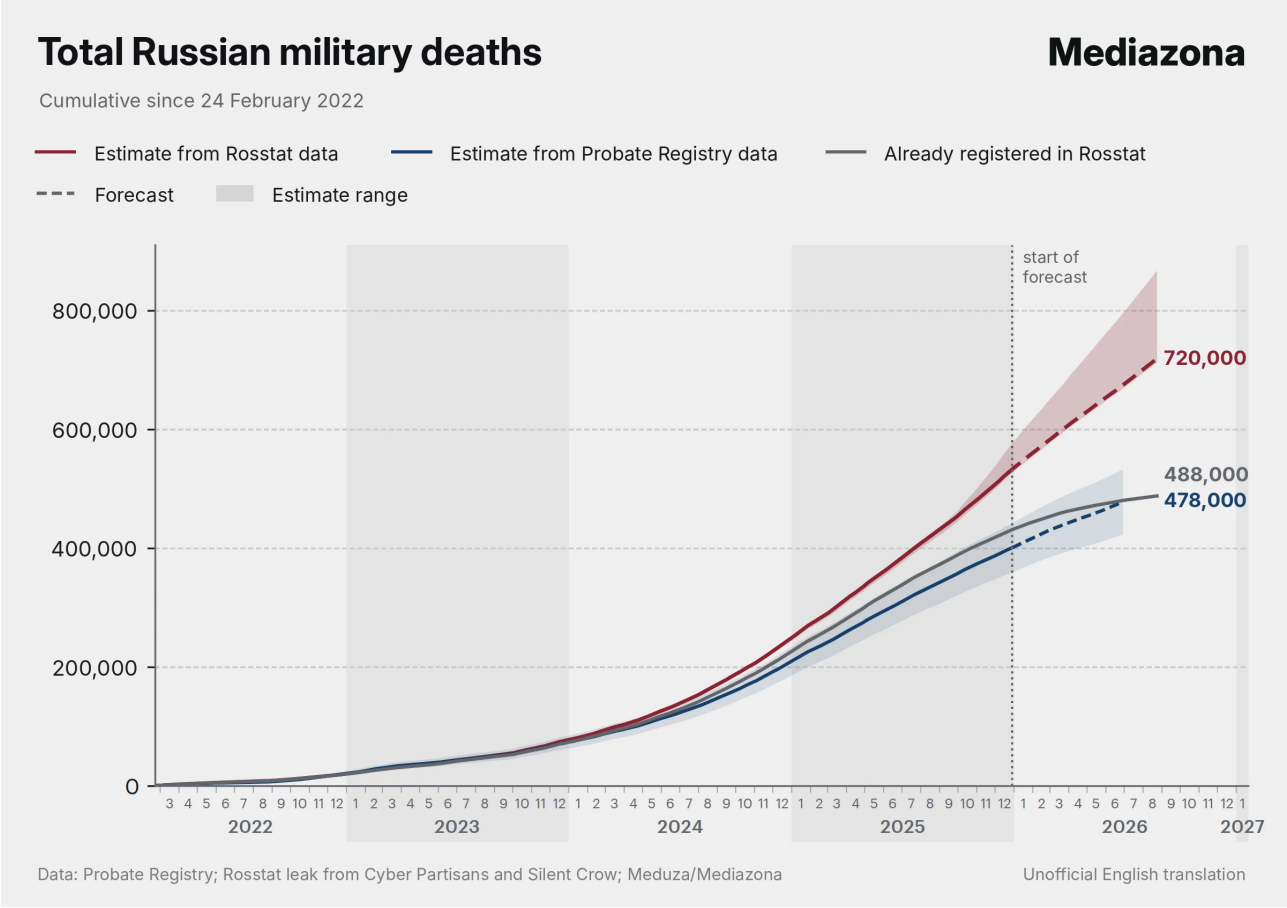
That data came from relatives' posts searching for the missing. Since 2023, Mediazona has collected more than 160,000 such posts. Almost all of those being searched for eventually turn out to be dead; fewer than 10% are found alive. The posts cover up to 40% of all ultra-late registrations in Rosstat, and this share is stable over time.

In the final model, the missing are split across three paths to death registration. For each path, a curve of the probability of registration as a function of delay is built from Rosstat data and the missing-person posts, taking into account that not everyone searched for has died. These curves are used to reconstruct the eventual total number of posts, which is then converted into a number of dead, accounting for changes in the shares of the three paths.

The model was tested retrospectively: everything that became known after a certain date was removed from the data, and the forecast was compared with what is known now. The error is under 5% in most periods and up to 15–20% in the earliest and latest ones. In the late periods the model underestimates, but it was deliberately left unadjusted, preferring to err on the low side.

For 2026, where the data is radically incomplete, a simple linear model based on the most recent Probate Registry data is used, again giving a conservative estimate.

Bottom line: by the end of 2025, counting deaths not yet registered, about 530,000 people had been killed, versus 350,000 without a significant share of the missing. By autumn 2026 the number had apparently grown to 720,000 or more.



The detailed methodology can be read on Meduza.

Translator's notes

This is an unofficial translation, not produced or endorsed by Mediazona or Meduza. Chart text was re-lettered in English and numbers use English separators (50,000 for 50 000); the data is unchanged.

Term used here	Russian original	Meaning
Probate Registry	Реестр наследственных дел (РНД)	The notaries' public register of inheritance cases; Mediazona's own English name for it
EGR ZAGS / EGR	ЕГР ЗАГС	Unified State Register of Civil Status Records
Registry office (ZAGS)	ЗАГС	Local civil registry office
SMEV	СМЭВ	System of Interagency Electronic Interaction, the state data-exchange bus
Death notice	справка о смерти	Non-medical document confirming a death; distinct from the medical death certificate (медицинское свидетельство)
Manner of death	род смерти	The certificate field for natural, accident, military operations, etc.
Additional attribute / service code	дополнительный признак / служебный код	Digits 19–20 of the record number (the unlabelled "00" in the record-number chart); the original uses both terms
DNR, LNR	ДНР, ЛНР (ЛДНР)	Russian-occupied parts of Donetsk and Luhansk oblasts

Linked sources: Mediazona original · Meduza methodology · RuSTMF database · Probate Registry · Finance Ministry Order No. 202n · Russia 200 named list