



Assessing the Gaza Death Toll After Eighteen Months of War

Gabriel Epstein



Smoke and haze after an explosion in Gaza, viewed from the Israeli side of the border, May 8, 2025.
REUTERS/AMIR COHEN

On March 23, 2025, for the eighth time since the Gaza war began in October 2023, the Hamas-run Ministry of Health released the names of the dead, with the total figure coming to 50,021.¹ The scope, structure, and veracity of the Gaza death toll have been contested since the start of the war. Now that fighting has resumed amid the breakdown of the January truce, a review of what is known and unknown about the death toll can offer insight into the Health Ministry's operations, and help the policy community and journalists navigate data from both the ministry and other sources.²

Here are the key findings:

- Reporting from the Hamas-run Gaza Ministry of Health has improved significantly since May 2024, but the ministry continues to make significant revisions and methodological problems persist. Neither the total death toll nor its demographic structure should be considered fully resolved.
- The war’s lethality dropped sharply from an average of 312 Gazan deaths per day between October and December 2023 to 59 deaths per day between January 2024 and January 2025.
- The toll consists largely of adult men, at 49.2% of reported deaths. In the 18–45 age range, men are 2.84 times more likely to have died than women, indicating a significant presence of militants.
- Whereas fighting-age men make up a large and growing share of the toll, all that can be safely speculated about the civilian-combatant casualty ratio is that it is neither extremely high nor extremely low. This reflects both a difficult war—hyper-urban with heavy Israeli use of airstrikes, comprehensive Hamas use of civilian infrastructure and tunnels, and Gaza civilians prevented from evacuating into Egypt—and Israel Defense Forces efforts to limit civilian casualties.
- The uncounted portion of the death toll is likely of moderate size and skewed toward militants. Claims that the true death toll is several multiples higher or considerably lower should be discarded.
- Claims by the Health Ministry and the Government Media Office (GMO), which is also run by Hamas, remain completely irreconcilable. Namely, the GMO has claimed false and unsupported figures for over a year, and no credible news outlet, government, or organization should rely on them.
- Responsible reporting must lay out the relevant claims from the Health Ministry and the IDF while clearly identifying sources and providing necessary caveats about their verifiability, what they include or exclude, and whether they distinguish between civilians and militants.

Death Toll Reporting in Gaza

To gain a comprehensive picture of the fatality count in Gaza, any analysis must consider the various methodologies, institutions, and reporting formats in use.

Methodologies

Death toll reporting in the current war has been fundamentally different from that in previous Hamas-Israel conflicts.³ The primary means by which the Health Ministry counts deaths is the hospital and morgue system, aka central collection system, which collects reports from public hospitals and morgues in an electronic database, and integrates reports from private and foreign-run medical institutions. This system has been used in peacetime and in all previous Hamas-Israel wars, and has continued to function throughout the current war, although with sharply reduced capacity during the early months before gradually being rebuilt.

Secondary methodologies, which were introduced by the Health Ministry early in the war and meant to supplement the central collection system, include an online portal dating to January 2024 that allows for reporting of family deaths, sometimes referred to as “family notifications.”⁴ These entries were initially added to the death toll without being vetted for accuracy, but since October 2024 they have been under active review by a judicial committee.⁵ Separately, a nebulous “media reports” methodology was used heavily between November 2023 and July 2024 before being downscaled and eventually eliminated by December 2024 through transfers to the other categories (for a more thorough explanation, see Appendix A). Between December 2024 and April 2025, five discrete increases in the death toll were registered—on January 11, February 8, March 19, March 23, and April 27—reflecting the processing of death reports from relatives.⁶

Institutions

The Hamas-run Gaza Health Ministry is the only governmental institution tasked with collecting data on Gaza casualties (fatalities and injuries), publishing this information via its health information unit, which is headed by the physician Zaher al-Wahidi.

The other Gaza institution making claims about the death toll is the Government Media Office,⁷ which previously managed reporters and other media but during the war became a sort of Hamas front office. Lacking either the authority or capacity to collect fatality data, the GMO has nevertheless published figures—irregularly—which have been unrealistic and irreconcilable with those of the Health Ministry (discussed below). Despite their dubious reliability, these claims were for months used by the United Nations and have been cited widely in the media, which has often incorrectly attributed them to the Health Ministry. The Ramallah-based Palestinian Authority (PA) Health Ministry also released a daily report between October 2023 and January 2025 with some general data on casualties apparently copied from public Gaza Health Ministry releases.⁸

The UN Office for the Coordination of Humanitarian Affairs (OCHA) has relayed claims from both the Gaza Health Ministry (throughout the war) and the GMO (November 2023–January 2024 and March–May 2024).⁹ In May 2024, OCHA stopped reporting GMO fatality claims after belatedly acknowledging concerns about their reliability,¹⁰ although it kept reporting the media office’s claims about missing Gazans until January 2025.

Health Ministry Data Structure

Throughout the war, the Gaza Health Ministry has provided daily casualty updates and occasional infographics through its Telegram and WhatsApp channels,¹¹ which present the previous day’s totals along with the cumulative figure. In the yearlong interval between December 2023 and December 2024, the Health Ministry also published, irregularly, at least seventy-one more-detailed public health emergency

reports,¹² which contained information variously disaggregated for men, women, children, and the elderly, as well as for hospital and methodology.

Between October 26, 2023, and March 23, 2025, as noted at the outset, the Health Ministry also released eight lists of the dead, which vary widely in their completeness and data quality, and in the information provided. Each entry includes some combination of name, sex, age, ID number, date of birth, and reporting methodology. Finally, the ministry does not differentiate between civilians and combatants in its reporting and uniformly attributes responsibility to Israel.

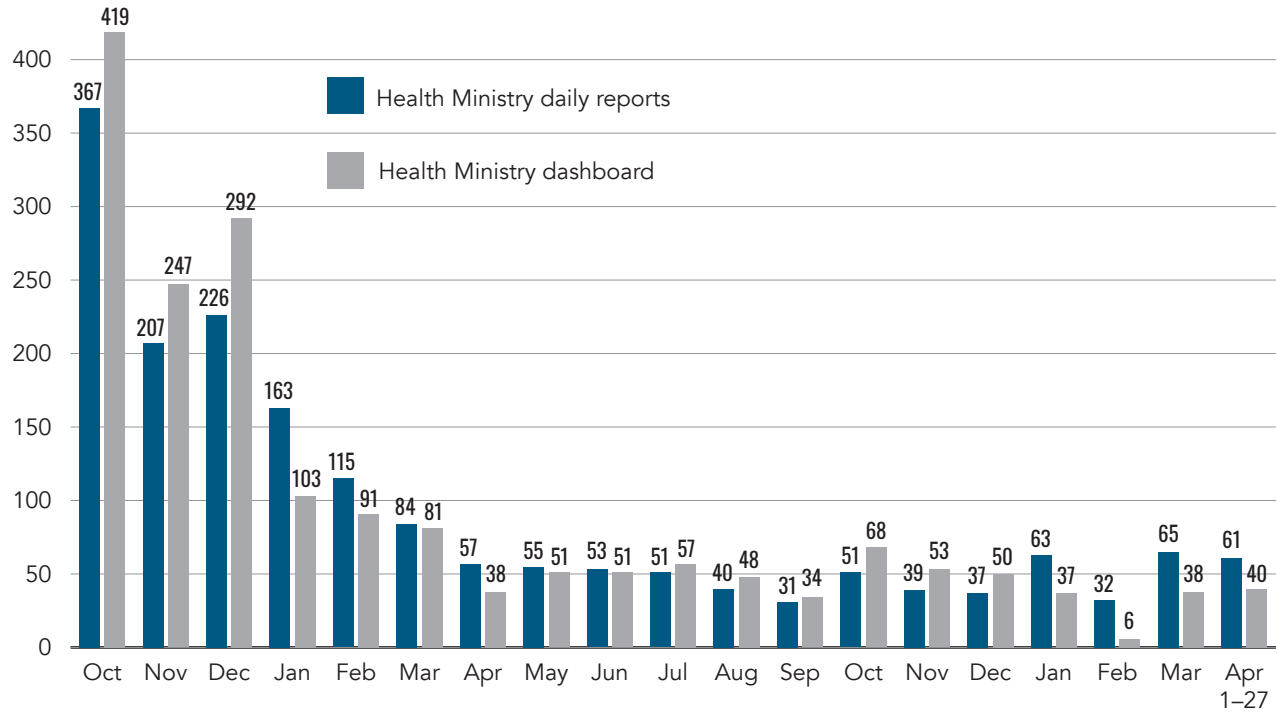
The Death Toll Over Time

Tracking the death toll over a given period is challenging relative to the cumulative count because the Gaza Health Ministry does not provide a death date in its public lists, despite appearing to have this information in its databases. Since the lists are subjected to heavy revision and deaths may be introduced months after they occur, they cannot be reliably used to calculate a death toll or its trajectory over any given period. The daily totals are therefore understood to be an interim metric because some fatalities will be missed and only added later. This was particularly true during October–December 2023, when the war was at its highest intensity and many Gaza hospitals had shut down.

In February 2025, the Health Ministry published an online dashboard that categorizes deaths by the month in which they occurred, allowing a comparison with the initial measurement of the daily tolls (see figure 1).¹³

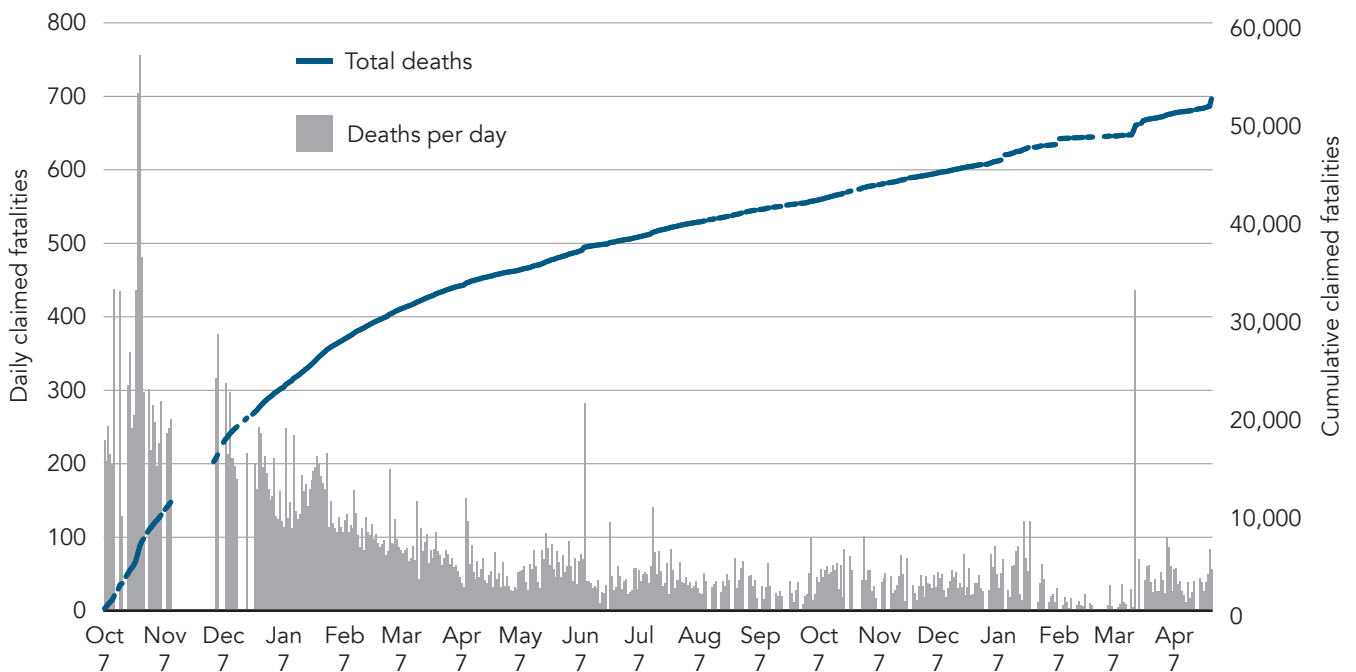
In the first three months of the war, Israel’s heavy airstrikes and initial ground invasion produced very high fatality figures in Gaza. But the subsequent approach, wherein the military largely sharpened its focus to specific neighborhoods, resulted in fewer casualties. Current analysis shows that the first three months were even more deadly than indicated by

Figure 1. Average Daily Death Toll in Gaza, Hamas-Israel War (2023–25)



Source: Gaza Ministry of Health

Figure 2. Cumulative vs. Daily Death Toll in the Hamas-Israel War, October 7, 2023–April 27, 2025



Source: Gaza Ministry of Health

initial Health Ministry reporting, while the following months were less so.

The dashboard also contains monthly data on the deaths of children and men ages 18–45, and reflects the extent to which the toll skewed toward adult men after the first three months. By the end of December 2023, 58% of total child fatalities already had occurred, whereas just 41% had occurred for the men 18–45 group.

While the Health Ministry’s most recent list of the dead was issued March 23, 2025, the ministry reported on its Telegram channel that as of April 27, 2025, the running toll was 52,243 (see figure 2).¹⁴

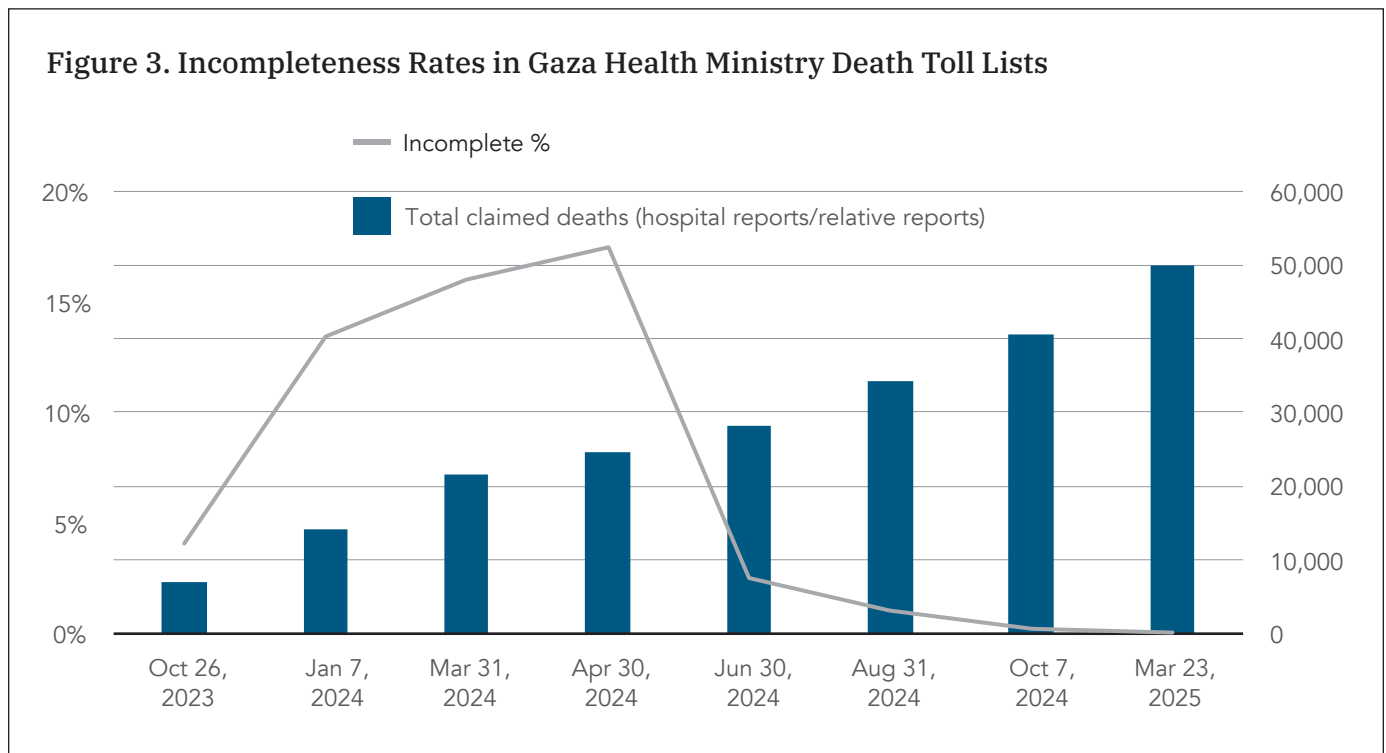
Analyzing the March 2025 Release

A full assessment of the Health Ministry’s fatality list published March 23 requires analysis of its completeness and demographic structure as well as a comparison against previous lists for additions and deletions.

Data Completeness

The 50,021 unique entries in the March 2025 list reflect the full Health Ministry claim of Gazans killed—whereas previous lists contained far fewer entries than the total claim.¹⁵ Of these reported deaths, 99.95% have full information for name, age, sex, date of birth, and valid ID, reflecting a monthslong ministerial effort to fill in missing data points, weed out duplicate entries, supplant placeholder IDs with real ones, and make other adjustments. As a result of this revision process, the incompleteness rate fell from a peak exceeding 17% in April 2024 to the current negligible level (see figure 3).

Yet completeness of data does not imply all such data is valid or accurately reflects only real deaths directly caused by the war. There are limits to external analysis of these factors, such as confirming that listed ID numbers, even if valid, belong to the person to whom they are attributed. Achieving full confidence in the list would require cross-referencing with the Palestinian population registry, which is maintained by the PA and not publicly accessible, as well as detailed case-by-case scrutiny to establish



circumstances associated with each death. Based on the Health Ministry’s admission of existing flaws in several thousand entries,¹⁶ the list is clearly not finalized and may yet see more removals.

While most previous lists assigned a counting methodology to each death, the March list does not do so. But supplemental information from the Health Ministry dashboard indicates that 11,069 deaths came from online submissions by relatives, while the other 38,952 came through the hospital and morgue system.

Added and Removed Entries

Compared with the October 2024 list, the March 2025 list adds 11,224 entries and removes 1,896, continuing a pattern of substantial revisions to the Health Ministry’s data.¹⁷ Almost 90% of the removed entries came from the family reporting system, and 226 of the new entries were reinstated after having been removed from previous lists.

According to health information chief Zaher al-Wahidi, the removals reflected cases in which people died of natural causes, were imprisoned rather than deceased, were missing without reason to believe they were dead, and others. Up until October 2024, the Health Ministry reportedly added all deaths submitted via the online portal without review by a judicial committee, and the subsequent removals can be attributed to the ongoing review process.¹⁸ Yet family reports have been rescinded in several other cases too, such as during April 5–April 7, 2024, part of the first week when data from the methodology was published.¹⁹

A look at earlier periods indicates similarly active revisions:

- Between August and October 2024, some 1,772 entries were removed—three-quarters of them from the hospital and morgue system. According to Wahidi, these removals occurred after an audit sparked by complaints from living Gazans who had been incorrectly marked as dead.²⁰

- Between June and August 2024, more than 80% of the 520 removed entries involved “placeholder IDs”—large strings of characters with identical starting sequences that serially failed an algorithmic check to determine their validity (see Appendix B for an expanded explanation). Thus, some of these “removals” likely involved replacements of a placeholder ID with the correct number.
- Major revisions took place prior to June 2024, but these are harder to trace because the Health Ministry data sets were less complete.

Most removed entries appear to have stayed off the list. Between June 2024 and March 2025, only 241 previously removed entries were reinstated in a later list: 15 in the October 2024 list plus the earlier-noted 226 in March 2025 (depicted in figure 4)—or about 6% of the nearly 4,000 entries removed.

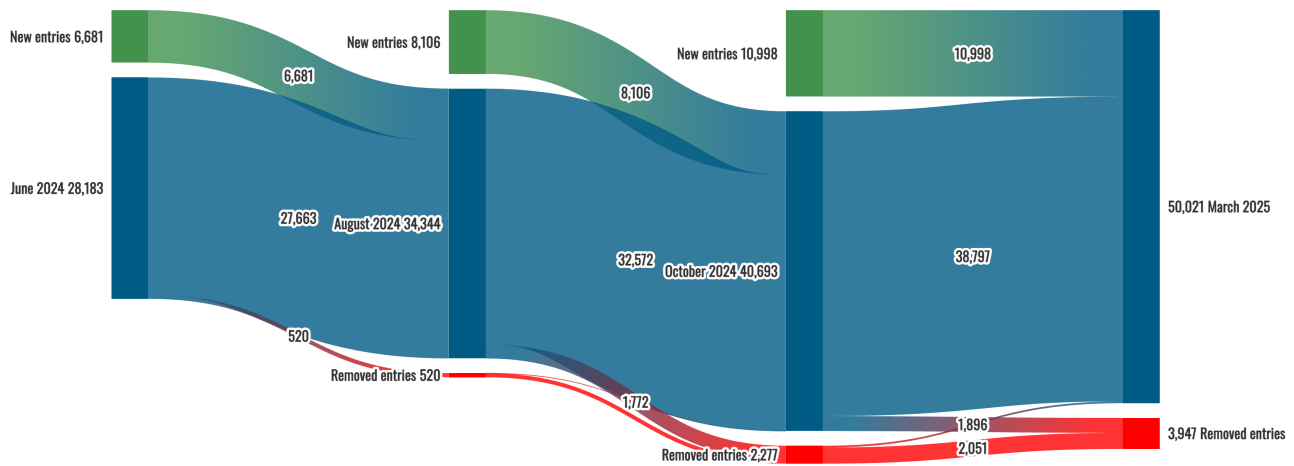
Substantial questions remain about the handling of family reports and the overall Health Ministry revision process—and accordingly whether potential future revisions will reveal more methodological flaws. The ministry’s handling of data, by its own admission, allowed a significant number of deaths to be falsely or inaccurately reported for months, covered up by a larger influx of new or newly reported deaths. This is a serious failing, even if one acknowledges the ministry’s stretched resources in wartime—and media outlets, analysts, and governments should give it more scrutiny. Yet the removals do not appear to have substantially affected the demographic balance of the death count, and their impact has likely been diluted by new reports.

Demographics

The March 23, 2025, list indicates that 24,618 (49.2%) of those reported killed were adult men, 9,790 (19.6%) were adult women, and 15,613 (31.2%) were children (see figure 5).

Furthermore, the March list exhibits a clear demographic trend over the previous year wherein men and teenage boys (15–59) are heavily

Figure 4. Additions and Removals in Gaza Death Toll Lists, June 2024–March 2025



Note: This graphic addresses revisions to the ministry’s list between June 2024 and March 2025 only, and includes entries whose placeholder ID was replaced with the correct one.

Source: Gaza Ministry of Health, processed by the author

Figure 5. Overall Demographic Breakdown of Fatalities, March 23, 2025

	Count	%
Men (18–59)	22,265	44.51%
Women (18–59)	8,304	16.60%
Boys (0–17)	8,899	17.79%
Girls (0–17)	6,714	13.42%
Elderly men (60+)	2,353	4.70%
Elderly women (60+)	1,486	2.97%
No age	0	0.00%
Total	50,021	100.00%

	Count	%
Male	33,517	67.01%
Female	16,504	32.99%
Overall total	50,021	100.00%

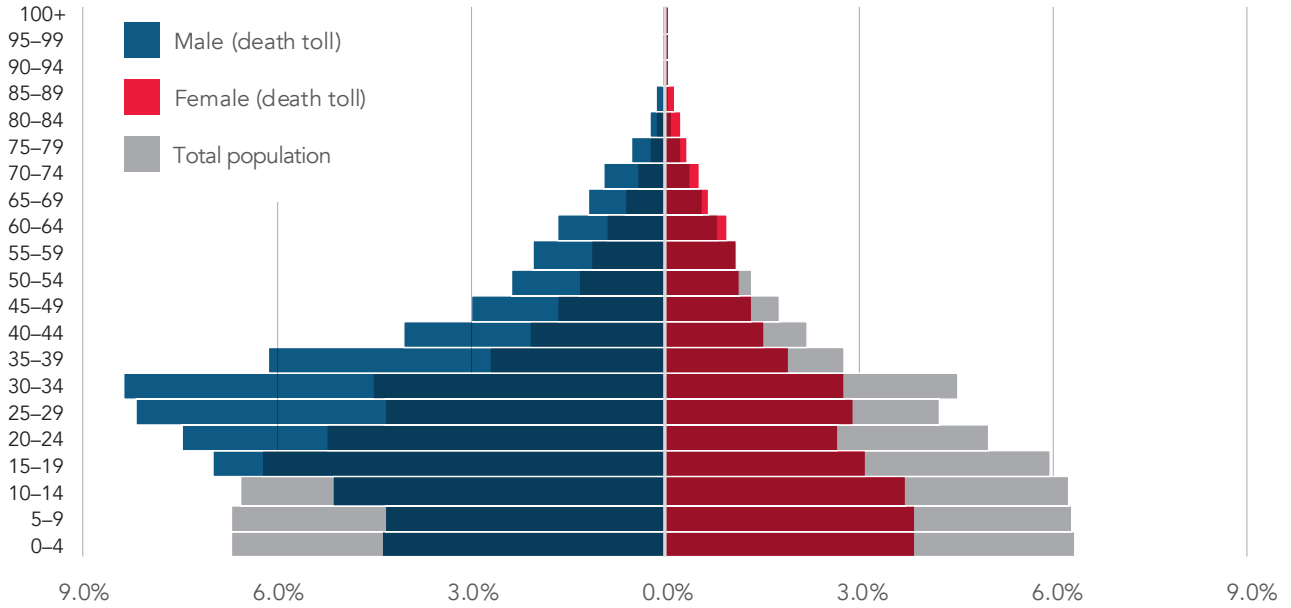
overrepresented (48.5%) relative to their population share (roughly 28%), paired with significant under-representation for all other groups (see figure 6).

Men, both military and civilian, generally die in wars at higher rates than women,²¹ but the Gaza imbalance is nevertheless striking, with the 18–45 male cohort 2.84 times more likely than women to be killed (see figure 7). A large part of this overrepresentation reflects the presence of combatants, who likely belong to the slightly wider 15–45 age range.

Health Ministry vs. GMO Claims

Since at least December 2023, findings from the Government Media Office have been completely irreconcilable with those from the Gaza Health Ministry, with the GMO listing far higher fatalities for women and children—and, by extension, far lower figures for men.²² The GMO published a new set

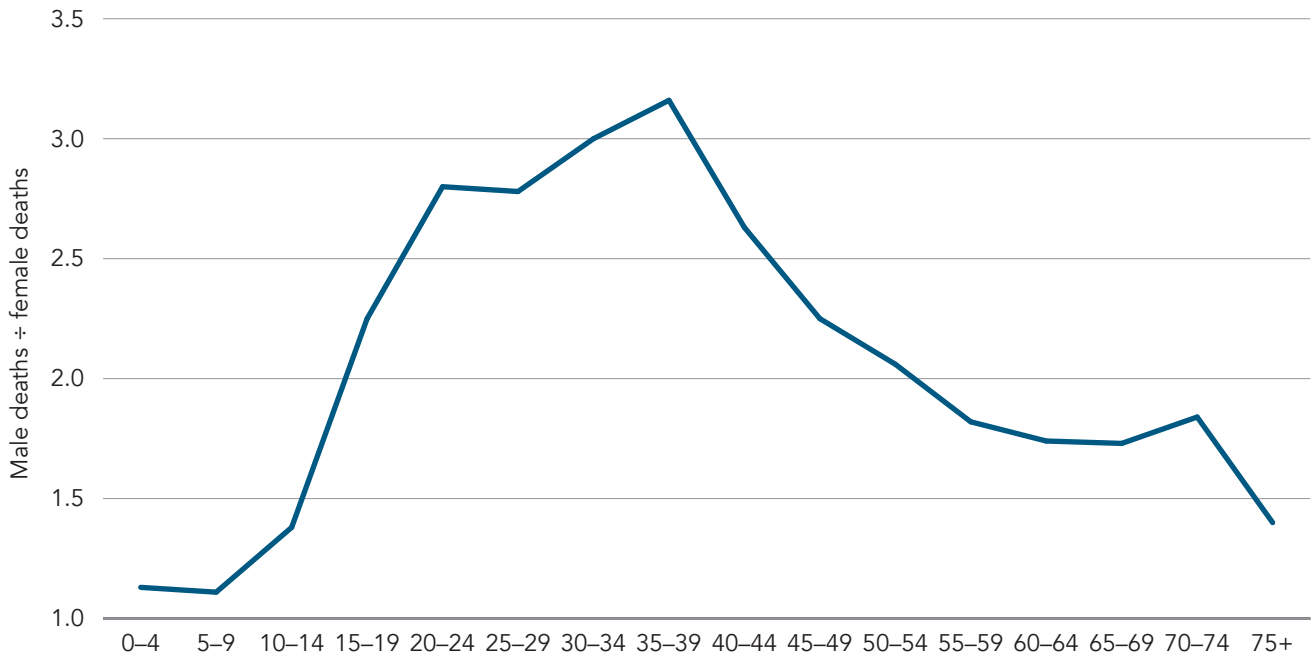
Figure 6. Proportional Distribution of Gaza Fatalities by Age and Gender vs. Total Population, October 7, 2023–March 23, 2025



Note: Lighter shading (blue and red) indicates a higher proportion in the death toll than in the general population, represented by the gray pyramid.

Sources: Gaza Ministry of Health, U.S. Census Bureau

Figure 7. Male-Female Death Ratio by Age



Source: Gaza Ministry of Health

of claims on March 23, 2025,²³ covering the same period as the new Health Ministry list, allowing for a direct comparison. The GMO thus appears to undercount male fatalities by more than 4,900, while overcounting women and children by the same amount (see figure 8).

Furthermore, reflecting vast discrepancies within the Gaza system, a comparison of the GMO claims from February 2²⁴ with those of March 23 indicates that 122 women and children died across seven weeks (see figure 9). By comparison, the Health Ministry claims that at least 417 women and children died between March 18 and March 23 alone.²⁵

Despite the glaring disconnect between these two sources, many Palestinian institutions—including the PA’s Central Bureau of Statistics, Ministry of

Education and Higher Education, and Ministry of Social Development—continue to cite GMO instead of Health Ministry claims.²⁶ In an effort to muddy the waters, Hamas-affiliated media outlets such as the Palestinian Information Center have even gone so far as to falsely attribute GMO figures to Health Ministry officials.²⁷ Such figures are then picked up by news outlets, often without attribution, and falsely promoted as credible. Given the GMO’s lack of authority or capacity to collect fatality reports, and the impossibility of reconciling its figures with those of the Health Ministry, which does have the authority and capacity, GMO claims can only be treated as false.²⁸ Other statistics or reports deriving from the media office should be treated with appropriate skepticism.

Figure 8. Health Ministry vs. GMO Fatality Counts by Age and Gender, March 23, 2025

Mar 23, 2025	Health Min List	GMO	Difference
Men	24,618	19,702	-4,916
Women	9,790	12,365	2,575
Children	15,613	17,954	2,341
Total	50,021	50,021	0

Figure 9. Inconsistencies in GMO Fatality Counts, February vs. March 2025

GMO	Feb 2, 2025	Mar 23, 2025	Difference	%
Men	17,290	19,702	2,412	95.19%
Women	12,316	12,365	49	1.93%
Children	17,881	17,954	73	2.88%
Total	47,487	50,021	2,534	100.00%

Changes During the January 2025 Ceasefire

The nearly two-month period between the start of the Hamas-Israeli ceasefire on January 19, 2025, and the resumption of major Israeli airstrikes on March 18 saw a shift in Health Ministry fatality reporting. Daily updates were now disaggregated to include recovered bodies, deaths from prior injury, new deaths, and the aforementioned bulk updates from the judicial committee assessing family reports (see figure 10). A total of 1,664 deaths were registered during this period.

The figure indicating 887 recovered bodies, assuming it also includes missing persons reported dead by their families, is relatively low. More than half were recovered in the first ten days of the ceasefire. But the lack of equipment to move large masses of rubble—exacerbated by IDF airstrikes on construction vehicles Israel identified as having been used in the October 7 attack²⁹—along with the need to avoid unexploded ordnance likely point to significant numbers of unrecovered bodies. Moreover, at five

points between January 11 and April 27, 2025, newly processed family reports were added to the toll, accounting for 2,535 deaths.³⁰ According to the Health Ministry,³¹ more than two thousand such reports, which are reviewed by a committee, remain to be processed.

Unknowns in the Death Toll

A picture of the death toll in Gaza remains incomplete. This is despite it being relatively detailed thanks to the territory's small size, robust prewar medical infrastructure relative to development level, extensive international aid and media attention, and comprehensive population database. The number of missing persons or previously unreported deaths is unclear, as is the combatant fatality count, both reported and unreported. Beyond new or newly reported deaths, the existing Health Ministry list is sure to undergo further revisions. Nor can IDF claims about the number of militants killed be clearly or cleanly compared to Gaza ministry claims. These unknowns prevent a full assessment of the death toll or calculation of a civilian-combatant casualty ratio.

Figure 10. Death Counts During the January–March 2025 Ceasefire, Gaza Health Ministry

Ceasefire, January 19–March 18	Deaths
Bodies recovered	887
Prior injuries	29
New deaths	176
Mass updates from judicial committee	572
Total	1,664

Natural and Indirect Deaths

In a September 2024 interview, the health official Zaher al-Wahidi reiterated his ministry's long-standing argument that its fatality reporting only includes direct casualties of war, not deaths from disease, old age, or other causes.³² While evaluating such a claim from the outside is almost impossible, the ministry's later admission that unvetted family reports added significant natural deaths to the list suggests they have not been excluded entirely.³³ Moreover, the Health Ministry has faced capacity challenges throughout the war, and officials may well have struggled at times to distinguish between natural and war-related deaths in the hospital and morgue system. Future releases, including a long-awaited all-cause mortality report, may shed light on the extent (and potential overlap) of natural deaths in previous reporting on the death toll.

Indirect deaths—resulting from the secondary impacts of war—are another unknown in the Health Ministry data. These deaths are often not included in casualty counts or are recorded separately.³⁴ Distinguishing between indirect and natural deaths is very difficult, and analysts have attempted to estimate the former through various methods. The Health Ministry, for its part, appears to be attempting a case-by-case approach: on April 29, 2025, it published a new form for relatives of the dead to report indirect deaths from cancer, lack of dialysis or other medical treatment, cold exposure, starvation, and inability to exit Gaza for treatment, among other reasons.³⁵ Given the absence of such a reporting option for the previous eighteen months, the existing death toll is likely to include some indirect deaths.

Missing Persons and Unreported Deaths

The number of missing persons and unreported deaths is a complex and weighty issue given that the scope and demographic structure of such figures could substantially reshape broader understandings of the war and media narratives about its cost. The Gaza Health Ministry has never provided a count

of the missing, which is likely beyond its area of responsibility. Nor has a clear estimate been issued by the Hamas-run Civil Defense, whose domain includes many Gaza first responders and ambulances. This leaves the Government Media Office effectively alone in having published semiofficial missing persons claims, although it has updated these only irregularly and without any apparent set methodology. For the period December 2023–April 2024, the GMO claimed 7,000 missing persons.³⁶ The estimate rose to 10,000 for May 2024–mid-November 2024, when it ticked up to 11,000.³⁷ GMO claims peaked at 14,222 on January 18, 2025,³⁸ the day before the ceasefire, before dropping back to 11,200 in the March 23 claim.³⁹

Up until January 14, 2024, OCHA relayed these claims through its own releases, a practice the UN office stopped without public explanation.⁴⁰ Whatever might have prompted this specific change, the wholesale unreliability of published GMO fatality data should prompt serious skepticism about its missing persons claims. The conditions of the war allow for hypotheses about those reported missing. One is that many individuals may ultimately have been presumed dead by their families and registered through the Health Ministry’s online portal, particularly if they were trapped under rubble and effectively unreachable. Indeed, the portal has included since inception an option to report deaths of those buried under the rubble.⁴¹ The Civil Defense has also used the term “under the rubble” at times to refer to bodies found in white body bags resembling those used by the Gaza emergency services and thus likely to have been recorded previously.⁴²

A large portion of unreported deaths are likely to be combatants who have died in unknown and difficult-to-access areas, and whose families are under extensive pressure from Hamas not to acknowledge militant losses. If this is true, currently unreported deaths would be more heavily male and likely to fall within the 18–45 age range than the existing reported death toll.

The combination of the online reporting form, which has been open since January 2024, and the relatively

low number of bodies recovered during the ceasefire—some of which had likely already been reported previously—casts doubt on the GMO’s claim of 14,000 missing dead. Nor are the more extreme claims of a death toll in the hundreds of thousands remotely plausible.⁴³ What is more likely is a moderate undercount that skews toward militants.

Comparing IDF and Gaza Health Ministry Claims

Shortly after the January 2025 ceasefire went into effect, then IDF chief of staff Herzi Halevi stated that Israeli forces had killed nearly 20,000 militants from Hamas, Palestinian Islamic Jihad (PIJ), and other militant groups,⁴⁴ which Israeli media outlets have reported separately from the more than 1,600 militants killed inside Israel during and after the October 7 attack.⁴⁵ One Israeli think tank, citing the IDF, places the total number of militants killed at 23,000, with 20,000 from Hamas and 3,000 from other groups.⁴⁶ A previous IDF assessment, from October 2024, indicated the military’s belief that it had killed more than 17,000 militants⁴⁷—14,000 with high confidence and 3,000 with medium or low confidence. As of September 2024, the IDF had reportedly identified in full some 10,000 combatants killed.⁴⁸

U.S. intelligence estimates run somewhat lower than IDF claims, at 10,000–15,000 militants killed as of January 2025. Also in January, then secretary of state Antony Blinken indicated that Hamas had recruited as many fighters as it had lost, then estimated at roughly 15,000.⁴⁹ Previously, in October 2024, the Armed Conflict Location & Event Data (ACLED) project indicated it had recorded detailed IDF reports accounting for some 8,500 Palestinian combatant deaths, but acknowledged its data was incomplete.⁵⁰

IDF claims are difficult either to verify or compare with Health Ministry figures, not least because of the degree of imprecision in media reports regarding what a cited figure includes—e.g., only Hamas deaths or those from all militant groups, those killed in Israel on and around October 7 or not. The IDF is the only entity with access to its own after-action reports,

battle damage assessments, and intelligence reports that would provide data on combatant deaths. Whereas third-party civilian vs. militant verification efforts generally rely on open-source information, IDF assessments can likely identify large numbers of combatants who mask their status and would not be otherwise clearly identifiable. For example, if a previously unaffiliated Gazan had recently joined a militant group and was killed by the IDF in ground combat or while attempting to plant an improvised explosive device, a third-party group would struggle to find open-source evidence proving the individual's militant status. These problems have existed in previous Hamas-Israel wars, when Israel may not have found substantial fault with the overall death toll but differed drastically from the UN or other observers on civilian versus combatant deaths.⁵¹

In identifying individuals as militants, the IDF has often relied on seized Hamas and PIJ personnel files that contain significant demographic and operational details.⁵² But while these files may hold information on tens of thousands of operatives, they are inherently outdated amid major Hamas and PIJ recruitment efforts, and also omit information on the many smaller militant groups the IDF is fighting in Gaza.

Furthermore, extensive Hamas efforts to conceal fighters' deaths and affiliations, including pressuring families not to publicize this information,⁵³ make it difficult for third parties to assign civilian or militant status to those killed. Another complicating factor is that many militants die in tunnels, outlying neighborhoods of Gaza's cities, or other difficult-to-access, remote, or unknown locations. This reduces the likelihood that they will be either recorded in the hospital and morgue system or reported by their family, who may not have had contact with them for some time before their death.

To summarize, the Gaza Health Ministry and IDF have different methods of data collection, are focused on different metrics, and take different approaches regarding civilian and combatant deaths—with the ministry not distinguishing between the two and the IDF focusing primarily on combatants. As a result, each is likely to miss some

deaths the other will collect, and their findings cannot be cleanly combined in analysis. Given that men and teenage boys, the groups most likely to be combatants, make up the majority of reported deaths—and that unreported deaths are expected to skew toward militants—IDF claims are plausible if currently unsupported. While a civilian-combatant ratio cannot be calculated with the available data, this data suggests neither an extremely low nor an extremely high ratio amid a chaotic, entirely urban war against a terrorist group that systematically exploits civilian infrastructure and operates a massive tunnel network, and in which Gaza civilians cannot flee into the Egyptian Sinai. Responsible reporting on the Gaza war should therefore relay the substance and origins of claims from both parties while making appropriate caveats.

Conclusions

Updated findings about fatality counts in the Gaza Strip lead to the following broad conclusions:

- The Health Ministry's March 23, 2025, list is largely complete, and the available evidence suggests it largely reflects real deaths—although substantial revisions continue toward removing incorrect entries and limited numbers of natural deaths. Yet without further information, neither the total death toll nor its demographic breakdown should be considered final.
- Health Ministry claims regarding the death toll cannot be clearly compared to IDF claims specifically about the number of combatants killed, so attempts to calculate a civilian-combatant casualty ratio will be of limited accuracy. Yet available evidence, along with careful hypotheses about the uncounted death toll, suggests this ratio is neither extremely low nor extremely high. Such a finding is compatible with an urban war characterized by Israel's heavy use of airstrikes paired with measures to protect civilians, Hamas's extensive tunnel network and use of civilian infrastructure, and Gaza's high population density.

- The intensity of the war dropped off after October–December 2023, with a more than fivefold decrease in lethality for Gazans in 2024. The proportion of deaths became increasingly weighted over time toward adult men.
- Adult men are disproportionately represented in the death toll (49.2%) relative to their population share (26%), with those in the 18–45 age range 2.84 times more likely to have died than women. While men generally die at higher rates than women in wartime, this level of imbalance undoubtedly reflects the significant presence of combatants in the count.
- A certain number of missing persons are presumed dead but not yet included in the death toll, and other deaths are unreported. The scope and contours of these figures are unknown but likely to be moderate in number and skewed toward militants. Claims that the true death toll is several multiples higher or much lower should be discarded.
- Claims by two Gaza entities, the Government Media Office and Health Ministry, remain completely irreconcilable. Specifically, the GMO has issued false and unsupported figures for more than a year, and no credible news outlet, government, or organization should rely on them. Instead, when dealing with unsourced GMO claims, writers and analysts should seek out the relevant Hamas-run governmental bodies or other actors (e.g., Interior Ministry, telecommunications companies, or Palestinian Red Crescent Society) and treat the associated data with appropriate skepticism.
- Responsible reporting should accurately lay out the relevant claims from the Health Ministry and the IDF while clearly identifying their source and providing necessary caveats about their verifiability, what they include or exclude, and whether they distinguish between civilians and militants.

Appendix A. How Gaza Health Authorities Reassigned Deaths from the “Media Reports”/“Unidentified” Category

In April 2024, the Hamas-run Gaza Ministry of Health began substantial revisions of its fatality figures for the war against Israel that began October 7, 2023, including large upward and downward changes in hospital/morgue and relative report counts.⁵⁴ Yet these major revisions were not matched by large swings in the overall daily claims put forward by the Health Ministry, suggesting movements from one category to another were being concealed.

Premise

Revisions in the hospital and relative report figures were offset precisely by shifts in the media report figures—i.e., when hospital or relative figures were revised upward, the media reports were revised downward by an equal amount, and vice versa.

Data Analysis

The following analysis calculates the components of change (daily additions and revisions) for each of the three methodologies (hospital/morgue reports, relative reports through an online portal, and “media reports”/“unidentified”) across nine time periods in 2024 during which revisions to one or multiple methodologies took place: March 31–April 1, April 1–4, April 5–7, April 13–14, April 20–21, April 30–May 2, June 6–9, June 22–24, and August 3–6. It establishes that in each instance, the overall change in the total death toll is equivalent to the sum of daily reported tolls, and that therefore revisions in any of the methodologies must be offset by revisions to another. Revisions in the hospital reports and relative reports are matched precisely by an equal and opposite revision in the media reports.

Sources

Sources for this analysis of reassigned deaths are:

- Gaza Ministry of Health public health emergency reports, archive available at <https://archive.org/details/moh-gaza-health-sector-emergency-reports/>
- Health Ministry daily reports on Telegram, <https://t.me/MOHMediaGaza>

Results

Prior to May 3, 2024, fatality data in the public health emergency reports was disaggregated by hospital, allowing for a direct computation of revisions to each methodology while comparing overall versus daily change (depicted in summary form in figure 11a). Precise sourcing and full calculations are available from the author.

After May 3 as well, the offset revisions could still be demonstrated. Since the total change in the death toll observed between each set of dates matched the sum of the daily death toll updates, any revisions to the methodologies must cancel out (see figure 11b).

Discussion

Across each of the nine periods examined, revisions in the hospital or relative reports were offset precisely by revisions in the media reports. These revisions accounted for the removal of 9,778 deaths from the media reports category between March 31 and August 6, 2024. Overall, between April and December 2024, media reports were drawn down from a peak of 15,070 deaths to 0. This strongly

Figure 11a. Transfers of Reported Deaths from Media Reports to Family and Hospital/Morgue Reports, April–August 2024*

Total	Mar 31, 2024	Apr 1, 2024	Change
Total deaths	32,845	32,916	71
Deaths (hospital/morgue system)	17,775	17,789	14
Deaths (relative reports)	0	2,864	2,864
Deaths (media reports)	15,070	12,263	-2,807
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			71
Daily death toll(s) (hospital/morgue)			14
Daily death toll(s) (media)			57
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	14	14	0
Relative reports revision	2,864	—	2,864
Sum of hospital/relative revisions			2,864
Media reports revision	-2,807	57	-2,864
Total	Apr 1, 2024	Apr 4, 2024	Change
Total deaths	32,916	33,091	175
Deaths (hospital/morgue system)	17,789	18,934	1,145
Deaths (relative reports)	2,864	2,786	-78
Deaths (media reports)	11,371	12,263	-892
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			175
Daily death toll(s) (hospital/morgue)			35
Daily death toll(s) (media)			140
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	1,145	35	1,110
Relative reports revision	-78	—	-78
Sum of hospital/relative revisions			1,032
Media reports revision	-892	140	-1,032

* The transfers occurred over nine discrete periods. A dash (—) signals an irrelevant category, since relative reports were added in tranches and thus could not have been part of the daily tolls.

Figure 11a continued

Total	Apr 5, 2024	Apr 7, 2024	Change
Total deaths	33,137	33,207	70
Deaths (hospital/morgue system)	18,944	18,950	6
Deaths (relative reports)	2,786	2,367	-419
Deaths (media reports)	11,407	11,890	483
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			70
Daily death toll(s) (hospital/morgue)			36
Daily death toll(s) (media)			34
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports	6	36	-30
Relative reports revision	-419	—	-419
Sum of hospital/relative revisions			-449
Media reports revision	483	34	449

Total	Apr 13, 2024	Apr 14, 2024	Change
Total deaths	33,729	33,797	68
Deaths (hospital/morgue system)	19,157	19,298	141
Deaths (relative reports)	2,367	3,099	732
Deaths (media reports)	12,205	11,400	-805
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			68
Daily death toll(s) (hospital/morgue)			20
Daily death toll(s) (media)			48
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	141	20	121
Relative reports revision	732	—	732
Sum of hospital/relative revisions			853
Media reports revision	-805	48	-853

Figure 11a continued

Total	Apr 20, 2024	Apr 21, 2024	Change
Total deaths	34,097	34,151	54
Deaths (hospital/morgue system)	19,401	20,839	1,438
Deaths (relative reports)	3,099	3,160	61
Deaths (media reports)	10,152	11,597	-1,445
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			54
Daily death toll(s) (hospital/morgue)			31
Daily death toll(s) (media)			23
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	1,438	31	1,407
Relative reports revision	61	—	61
Sum of hospital/relative revisions			1,468
Media reports revision	-1,445	23	-1,468
Total	Apr 30, 2024	May 2, 2024	Change
Total deaths	34,568	34,622	54
Deaths (hospital/morgue system)	20,982	20,971	-11
Deaths (relative reports)	3,160	3,715	555
Deaths (media reports)	9,936	10,426	-490
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			54
Daily death toll(s) (hospital/morgue)			4-32
Daily death toll(s) (media)			22-50
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	-11	4-32	-15--43
Relative reports revision	555	—	555
Sum of hospital/relative revisions			512-540
Media reports revision	-490	22-50	-512--540

Figure 11b. Transfers of Reported Deaths from Media Reports to Family and Hospital/Morgue Reports, April–August 2024

Total	Jun 6, 2024	Jun 9, 2024	Change
Total deaths	36,731	37,124	393
Deaths (hospital/morgue system)	22,104	22,491	387
Deaths (relative reports)	3,715	4,814	1,099
Deaths (media reports)	10,912	9,819	-1,093
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			393
Daily death toll(s) (hospital/morgue)			0–393
Daily death toll(s) (media)			0–393
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports	387	0–393	-6–387
Relative reports revision	1,099	—	1,099
Sum of hospital/relative revisions			1,093–1,486
Media reports revision	-1,093	0–393	-1,093--1,486

Total	Jun 22, 2024	Jun 24, 2024	Change
Total deaths	37,598	37,658	60
Deaths (hospital/morgue system)	22,892	22,951	59
Deaths (relative reports)	4,814	4,989	175
Deaths (media reports)	9,892	9,718	-174
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			60
Daily death toll(s) (hospital/morgue)			0–60
Daily death toll(s) (media)			0–60
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	59	0–60	-1–59
Relative reports revision	175	—	175
Sum of hospital/relative revisions			174–234
Media reports revision	-174	0–60	-174--234

Figure 11b continued

Total	Aug 3, 2024	Aug 6, 2024	Change
Total deaths	39,583	39,677	94
Deaths (hospital/morgue system)	24,839	26,290	1,451
Deaths (relative reports)	4,989	6,187	1,198
Deaths (media reports)	9,755	7,200	-2,555
Daily			Change
Daily death toll(s) (reported by Health Ministry during time period)			94
Daily death toll(s) (hospital/morgue)			94
Daily death toll(s) (media)			0
Revision (total change minus daily change)	Total change	Daily change	Revision
Hospital reports revision	1,451	94	1,367
Relative reports revision	1,198	—	1,198
Sum of hospital/relative revisions			2,555
Media reports revision	-2,555	0	-2,555

indicates that such reports were, at least in part, used as a “slush” category that, intentionally or not, concealed major revisions to the cumulative claimed death toll. Thus, contrary to an outward image of numeric stability, sizable revisions were made under the surface, many of which raise methodological questions.

More than 95% of revisions to the hospital count in April–September 2024 came from several facilities that had been inactive since early November 2023 (Indonesian, Kamal Adwan, al-Shifa), early January 2024 (al-Aqsa), and early February 2024 (Nasser). Significant revisions, none of which were announced or explained, included an increase of some 1,600 reported fatalities at al-Aqsa (April 1–7), while Kamal Adwan reported a decrease by half (April 5–7), then a nearly 500% increase (April 13–14). For the Indonesian, Kamal Adwan, al-Shifa, and Nasser Hospitals, daily fatality counts were not resumed

alongside the revisions, although al-Aqsa did commence reporting a daily death total. It is unclear what prompted these revisions or why they would be perfectly offset by changes in media reports, except to make the numbers work, or unless a previously unacknowledged Health Ministry policy were at play.

Relative reports across this period were also revised down substantially (e.g., during April 1–4 and April 5–7) and up (e.g., during April 13–14 and April 20–21). Upward revisions likely reflected the arrival of new data tranches, with the Health Ministry acknowledging in April 2024 that every time it received a new relative report, it would remove one media report.⁵⁵ Yet logically, downward revisions in total relative reports would not result in a corresponding upward offset in media reports. If decreases in relative reports reflected the weeding out of duplicates with either hospital reports or media reports, then this would lead to a decrease in relative

reports and a corresponding drop in the overall claimed total death toll.

Finally, with media reports rendered moot by December 2024, relative reports began to be added directly to the death toll. This has occurred on five occasions in 2025—January 11, February 8, March 19, March 23, and April 27—adding a cumulative 2,535 deaths to the total.⁵⁶ Yet new relative reports cannot account for all the canceled media reports, based on a numeric analysis. Accordingly, new hospital reports or revisions to the count must also have prompted the cancellation of many media reports, a practice never publicly disclosed by the Health Ministry.

As for removal of relative reports, in April 2025 the Health Ministry admitted that it had not vetted these reports prior to October 2024, and that from then until March 2025 it had removed more than 1,700 of them.⁵⁷ Combined with previous removals, more

than 2,500 relative reports have been removed in the past year, 15–20% of the total submitted via the Google Form and later the portal.

Unless an alternative explanation emerges, analysts will be compelled to conclude, based on the findings presented here, that the Gaza Health Ministry used nebulous media reports (euphemistically renamed “incomplete entries” on April 1, 2024) to mask major revisions in its death toll claims. Given its removal from the list of more than 2,500 relative reports and thousands more hospital and morgue reports, the Health Ministry’s policy of directly canceling media reports, when new and unvetted relative reports arrived, should be considered improper. It was undoubtedly a source of persistent errors as well. These changes deserve further scrutiny and indicate that Health Ministry fatality-reporting methodologies beyond the central collection system had serious flaws that went unaddressed for months.

Appendix B. Placeholder IDs in the Gaza Death Toll

While many analyses of the Gaza death toll have focused on its demographic structure or used various methods to estimate its reliability or lack thereof, relatively few have dealt with the complex issue of invalid IDs, and only one with the Gaza Health Ministry’s use of placeholder IDs.⁵⁸ A discussion of the structure of Palestinian ID numbers, the method to check their validity, and the use and phasing out of placeholder IDs appears here for the first time. The Health Ministry never formally acknowledged its use of placeholder IDs, which likely accounted for as many as 2,200 entries (or roughly 9% of the total) at their peak in April 2024.

Background

Palestinian ID numbers are nine digits and begin with an 8 or 9 for those born or registered before the 1995 Oslo II agreement—and with a 4 for those born or registered after 1995.⁵⁹ The PA’s Ministry of Civil Affairs is formally responsible for the Palestinian population registry, issuing and updating ID numbers, while the Population Registry Office within Israel’s Coordinator of Government Activities in the Territories (COGAT) maintains and updates the Israeli copy of the registry.⁶⁰ Yet, while the PA issues the physical ID card, the numbers cannot be assigned without COGAT’s approval, giving Israel significant control over the process.⁶¹ In 2022, the Hamas-run Gaza Ministry of Interior estimated that some 30,000 Gazans lacked a permanent ID number, and instead held a temporary card with a number beginning with 7—although 13,500 were then set to receive ID numbers under an agreement with Israel.⁶² Cards are printed in Arabic and Hebrew, and contain the holder’s full name, ID number, sex, date of birth, religion, place of birth, and location of registration.

Determining ID Number Validity

Both Palestinian and Israeli IDs are generated using the Luhn, or modulus 10, algorithm,⁶³ the same method used to create credit card numbers, designed to prevent single-digit transcription or entry errors in strings of numbers. The “check digit,” as applied to the Palestinian Health Ministry lists, is the last in a string read from right to left. To determine if a nine-digit ID is valid, the remaining eight digits are multiplied by one for the first, third, fifth, and seventh digits and by two for the second, fourth, sixth, and eighth digits. If any of these operations produces a sum greater than ten, then the digits are added together (e.g., for 16, $1 + 6 = 7$). Thereafter, the sum of the multiplied eight digits is divided by 10 and the remainder is subtracted from 10 (see examples below). If this calculation yields the check digit, then the ID is valid. Otherwise, it is invalid.

Example 1: Valid ID

ID #: 9-3-4-3-1-7-6-5-2

9 is the check digit. Then:

Position: 8-7-6-5-4-3-2-1

Digit: 3-4-3-1-7-6-5-2

Multiplied: 6-4-6-1-5-6-1-2

Sum: 31

10 modulus 10: $10 - 31 \bmod 10$

[the remainder of $31 \div 10$] = 9

Check digit matches: Yes

Example 2: Invalid ID

ID #: 8-0-4-6-8-9-3-7-3

8 is the check digit. Then:

Position: 8-7-6-5-4-3-2-1

Digit: 0-4-6-8-9-3-7-3

Multiplied: 0-4-3-8-9-3-5-3

Sum: 35

Modulus 10: $10 - 35 \bmod 10$

[the remainder of $35 \div 10$] = 5

Check digit matches: No

Invalid IDs in the Gaza Death Toll

The first list of Gaza fatalities, released by the Health Ministry in October 2023, contained only 5 invalid IDs, but the figure rose to 1,599 by January 2024 and 2,211 by the end of March 2024 before peaking at 2,295 at the end of April 2024. A cleanup effort by the ministry eliminated almost all these entries, so that by March 2025 only 24 invalid IDs remained on the list.

Invalid IDs take three principal forms:

- Errors: Extra spaces, nonnumerical characters, or single-digit mis-inputs.
- Incorrect number of digits: IDs as short as one digit and as long as twelve digits can be seen in earlier iterations of the Health Ministry’s list. The most common non-nine-digit IDs are eight or six digits.
- Placeholder IDs (addressed at right).

Placeholder IDs

Placeholder IDs appear to have been widely used earlier in the war, in cases when bodies were delivered to a hospital without an ID or the hospital could not record the ID. Beginning in May 2024, these IDs were gradually replaced, presumably with correct ones for each person killed. Placeholder IDs have three primary characteristics: (1) They share a similar starting set of digits. (2) They often appear in clusters within which the numbers themselves rise gradually from one entry to the next, with only the final digit changing—a trend incompatible with the Luhn algorithm since Palestinian IDs have only three possible check digits. (3) They are invalid at vastly higher rates than other entries.

The most common placeholder ID type has nine digits and begins with 8046. Of the 1,657 such IDs in April 2024, 83.8% failed the check digit test, compared with 0.5% of all other nine-digit IDs (see figure 12). Given such a high failure rate and the sequential nature of the placeholders, many that passed the algorithmic check likely did so by accident, meaning the true invalid rate is even higher.

Other placeholder IDs likely exist as well, possibly from private or foreign hospitals and subject to a different system. For example, 91.53% of eight-digit IDs in the April 2024 list—invalid anyway because

Figure 12. Invalid IDs in the April 2024 Health Ministry Death Toll List

Type of ID	Valid	Invalid	Total	% Invalid
9-digit IDs starting with 8046	269	1,388	1,657	83.8%
All other 9-digit IDs	20,355	100	20,455	0.5%
Non-9-digit placeholder IDs	0	591	591	100.0%
Other non-9-digit IDs	0	216	216	100.0%
Total	20,624	2,295	22,919	10.0%
Total (placeholder IDs)	0	1,979–2,248*	22,919	8.6%–9.8%

* The figure 1,979 reflects those entries certain to be placeholders, according to the author’s analysis. The additional 269 entries, bringing the total to 2,248, correspond to valid IDs beginning with 8046 that may have passed the check-digit test in error.

of their length—begin with 4406, 4407, 4408, 4409, 1010, or 1011. They too appear in clusters. If a digit had simply been dropped from a valid nine-digit ID, the resulting eight-digit IDs would be expected to be much more diverse.

The placeholder IDs discussed in the last two paragraphs alone made up 86.2% of invalid IDs in April 2024, and some IDs that passed the algorithmic

check may have done so by accident. This indicates that placeholders played a much larger role in data set incompleteness than mis-input IDs. The Health Ministry has never publicly acknowledged the use of placeholder IDs, but as demonstrated, they were widely used between November 2023, when the hospital network in Gaza began to collapse, and May 2024, when the Health Ministry began a major effort to clean up its death toll list.

NOTES

- 1 See post (in Arabic) on the Gaza Ministry of Health Telegram channel, March 24, 2025, <https://t.me/MOHMediaGaza/6396>. Previous lists were released in October 2023, January 2024, March 2024, April 2024, June 2024, August 2024, and October 2024, mostly through the Telegram channel but in one instance via WhatsApp only (October 2024). All but the January 2024 list were released as PDFs, and all can be accessed here in their original form (including exact dates of release and coverage): <https://archive.org/embed/moh-death-toll-lists-original>. Translated and formatted spreadsheets with basic demographic and error-data processing are available from the author upon request.
- 2 This analysis follows up on a previous study by the author: Gabriel Epstein, *How Hamas Manipulates Gaza Fatality Numbers: Examining the Male Undercount and Other Problems*, Policy Note 144 (Washington Institute, 2024), <https://www.washingtoninstitute.org/policy-analysis/how-hamas-manipulates-gaza-fatality-numbers-examining-male-undercount-and-other>.
- 3 For a more detailed explanation, see Epstein, *How Hamas Manipulates*, <https://www.washingtoninstitute.org/policy-analysis/how-hamas-manipulates-gaza-fatality-numbers-examining-male-undercount-and-other>.
- 4 On May 27, 2024, family reporting was moved to an online portal hosted by the Health Ministry. For the current version of the form, see <https://sehatty.ps/moh-registration/public/add-order>. For an earlier archived version, see <https://web.archive.org/web/20250116021920/https://sehatty.ps/moh-registration/public/add-order>. From January 5, 2024, to May 27, 2024, family reporting was done through a Google Form, where it underwent multiple revisions. Archived copies from January 5 and April 27 are available from the author.
- 5 Ben van der Merwe, “Hundreds of Names Removed from Official Gaza War Death List,” Sky News, April 5, 2025, <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 6 See these updates from the Ministry of Health Telegram channel: January 11, 2025, <https://t.me/MOHMediaGaza/6227>, February 8, 2025, <https://t.me/MOHMediaGaza/6283>, March 19, 2025, <https://t.me/MOHMediaGaza/6366>, March 23, 2025, <https://t.me/MOHMediaGaza/6377>, and April 27, 2025, <https://t.me/MOHMediaGaza/6495>.
- 7 For the Government Media Office Telegram channel, see <https://t.me/mediagovps/>. For an archived copy covering the channel’s inception in December 2022 to April 18, 2025, see <https://archive.org/details/gmo-telegram-archive/>.
- 8 For the Palestinian Authority Ministry of Health, see <https://site.moh.ps/>; for an archive of its daily reports, see <https://bit.ly/44emLb6>.
- 9 For updates from the UN Office for the Coordination of Humanitarian Affairs, see <https://www.ochaopt.org/updates>.
- 10 Gabriel Epstein, “Untangling the UN’s Gaza Fatality Data,” PolicyWatch 3871, Washington Institute for Near East Policy, May 17, 2024, <https://www.washingtoninstitute.org/policy-analysis/untangling-uns-gaza-fatality-data>.
- 11 For the Health Ministry Telegram channel, see <https://t.me/MOHMediaGaza/>; one Health Ministry WhatsApp group can be joined here: <https://chat.whatsapp.com/CY0USb3OuNC5A6XV2i7axi>.
- 12 See an archive of these emergency reports: <https://bit.ly/42mDwhV>.
- 13 For the dashboard, see <https://www.sehatty.ps/public/>; each iteration of the dashboard is archived here: <https://bit.ly/3EfbgFT>.

- 14 See post (in Arabic) on the Health Ministry’s Telegram channel, April 20, 2025, <https://t.me/MOHMediaGaza/6470>.
- 15 Gaza Health Ministry, March 24, 2025, <https://t.me/MOHMediaGaza/6396>; full data available at <https://archive.org/download/pn-158-moh-3-23-25-share-copy-rev>.
- 16 Merwe, “Hundreds of Names Removed,” <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 17 For an interactive version of figure 4, see <https://public.flourish.studio/visualisation/22472479/>.
- 18 Merwe, “Hundreds of Names Removed,” <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 19 See archived data at <https://bit.ly/4jnAssz> and <https://bit.ly/4j18VgQ>.
- 20 Merwe, “Hundreds of Names Removed,” <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 21 Christin Ormhaug with Patrick Meier and Helga Hernes, *Armed Conflict Deaths Disaggregated by Gender*, PRIO Paper 23 (International Peace Research Institute, 2009), <https://www.prio.org/publications/7207>.
- 22 For more, see Epstein, “Untangling UN Fatality Data,” <https://www.washingtoninstitute.org/policy-analysis/untangling-uns-gaza-fatality-data>, and Gabriel Epstein, “Gaza’s Fatality Data Has Become Completely Unreliable,” PolicyWatch 3851, Washington Institute for Near East Policy, March 26, 2024, <https://www.washingtoninstitute.org/policy-analysis/gaza-fatality-data-has-become-completely-unreliable>.
- 23 Posted (in Arabic) on the GMO Telegram channel, March 23, 2025, <https://t.me/mediagovps/3529>.
- 24 Posted (in Arabic) on the GMO Telegram channel, February 2, 2025, <https://t.me/mediagovps/3474>.
- 25 Posted (in Arabic) by “Hamza Salem” on the Ministry of Health Telegram channel, March 23, 2025, <https://t.me/MOHMediaGaza/6381>.
- 26 See Palestine Central Bureau of Statistics, “Palestine in Figures 2024,” March 2025, <https://www.pcbs.gov.ps/Downloads/book2715.pdf>; “On Palestine Child’s Day,” post on Telegram, Palestinian Authority Ministry of Education and Higher Education, April 5, 2025, https://t.me/moe_ps/3122; and PA Ministry of Social Development, post on Telegram, March 13, 2025, <https://t.me/mosdPalestine/71>.
- 27 For example, the Palestinian Information Center published the following article: “Al-Bursh [Barsh]: Israel Deliberately Targets Children and Women Through Direct Strikes and Starvation,” Palestinian Information Center, April 22, 2025, <https://english.palinfo.com/news/2025/04/22/337876/>. The piece quotes Health Ministry director-general Munir al-Barsh as saying that 17,954 children and 12,365 women had been killed—claims actually made by the GMO on March 23, 2025. Barsh, by contrast, had posted on his official X account three days earlier that 15,613 children had been killed, reflecting the Health Ministry’s claim from its March 23 list: https://x.com/Dr_Muneer1/status/1913443724685631691.
- 28 Gabriel Epstein, “Untangling the UN’s Gaza Fatality Data,” <https://www.washingtoninstitute.org/policy-analysis/untangling-uns-gaza-fatality-data>.
- 29 “The IDF Struck Approximately 40 Pieces of Engineering Vehicles Used for Terror Purposes, Including During the October 7th Massacre,” press release, Israel Defense Forces, April 22, 2025, <https://www.idf.il/287209>.
- 30 See these updates on the Health Ministry Telegram channel: January 11, 2025, <https://t.me/MOHMediaGaza/6227>, February 8, 2025, <https://t.me/MOHMediaGaza/6283>, March 19, 2025, <https://t.me/MOHMediaGaza/6366>, March 23, 2025, <https://t.me/MOHMediaGaza/6377>, and April 27, 2025, <https://t.me/MOHMediaGaza/6495>.
- 31 See Gaza Ministry of Health, “Statistics of the Israeli Aggression on the Gaza Strip, 2023–2025” (in Arabic), <https://www.sehatty.ps/public/#>.
- 32 Sharif Abdel Kouddous, “How the Health Ministry in Gaza Counts the Dead,” Drop Site, September 25, 2024, <https://www.dropsitenews.com/p/how-gaza-health-ministry-counts-dead>.
- 33 Merwe, “Hundreds of Names Removed,” <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 34 “Direct and Indirect Conflict Deaths,” Every Casualty Counts, <https://everycasualty.org/knowledge-base/direct-and-indirect-conflict-deaths/>.
- 35 “Reporting Indirect War Deaths” (in Arabic), Gaza Ministry of Health, <https://sehatty.ps/moh-registration/public/IndirectDeaths>.
- 36 See the GMO Telegram channel (in Arabic): April 28, 2024, <https://t.me/mediagovps/2770>, and May 3, 2024, <https://t.me/mediagovps/2803>.

- 37 GMO Telegram channel (in Arabic): November 9, 2024, <https://t.me/mediagovps/3281>, and November 19, 2024, <https://t.me/mediagovps/3300>.
- 38 GMO Telegram channel (in Arabic), January 21, 2025, <https://t.me/mediagovps/3431>.
- 39 GMO Telegram channel (in Arabic), March 23, 2025, <https://t.me/mediagovps/3529>.
- 40 UN Office for the Coordination of Humanitarian Affairs, “Reported Impact Snapshot | Gaza Strip,” January 14, 2025, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-14-january-2025>, and January 22, 2025, <https://www.ochaopt.org/content/reported-impact-snapshot-gaza-strip-22-january-2025>.
- 41 “Martyrs and Missing Persons Reporting Form” (in Arabic), Gaza Ministry of Health, archived January 5, 2024, <https://web.archive.org/web/20240427121458/https://docs.google.com/forms/d/e/1FAIpQLScndnMojIJoJfSPTD25uqkZSzUH--G05AMwcbbyJB42bNqCw/viewform>.
- 42 See post on Palestinian Civil Defense–Gaza Telegram channel (in Arabic), March 10, 2025, <https://t.me/dcdgaza/8964>.
- 43 See Devi Sridhar, “Scientists Are Closing In on the True Scale of Death and Disease in Gaza,” *Guardian*, September 5, 2024, <https://www.theguardian.com/commentisfree/article/2024/sep/05/scientists-death-disease-gaza-polio-vaccinations-israel>, citing Rasha Khatib, Martin McKee, and Salim Yusuf, “Counting the Dead in Gaza Difficult but Essential,” *Lancet* 404, no. 10449 (July 2024): 237–38, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01169-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01169-3/fulltext). For a rebuttal of the *Lancet* letter, see Michael Spagat, “A Critical Analysis of the *Lancet*’s Letter ‘Counting the Dead in Gaza: Difficult but Essential,’” Action on Armed Violence, July 10, 2024, <https://aoav.org.uk/2024/a-critical-analysis-of-the-lancets-letter-counting-the-dead-in-gaza-difficult-but-essential-professor-mike-spagat-reviews-the-claim-the-total-gaza-death-toll-may-reach-upwards-of-186000/>.
- 44 Nir Davori, “Chief of Staff, in Resignation Statement, Calls for Investigative Committee and Says ‘No One Aided the Enemy’” (in Hebrew), N12, January 21, 2025, https://www.mako.co.il/news-military/2025_q1/Article-fcc20b1dfa98491026.htm.
- 45 Nir Davori, “Refusal of Southern Command’s Request Before the Massacre” (in Hebrew), N12, updated February 27, 2024, https://www.mako.co.il/news-military/2024_q1/Article-bb644614196ed81026.htm; Emanuel Fabian, “Israeli Soldier Killed in Hamas Attack, in First Since Collapse of Gaza Ceasefire,” *Times of Israel*, April 19, 2025, <https://www.timesofisrael.com/israeli-soldier-killed-in-hamas-attack-in-first-since-gaza-ceasefire-collapse/>.
- 46 Eado Hecht, “The Gaza Terror Offensive, 19 March–11 April 2025,” Begin-Sadat Center for Strategic Studies, April 20, 2025, <https://besacenter.org/the-gaza-terror-offensive-october-7-8-2023/>.
- 47 See “Eliminations and Interrogations: Gaza Strip,” Israel Defense Forces, <https://bit.ly/4j0UoIh>.
- 48 Hanan Greenwood, “IDF Confirms Identity of 10,000 Hamas, PIJ Terrorists Killed,” *Israel Hayom*, September 16, 2024, <https://www.israelhayom.com/2024/09/16/idf-confirms-10000-hamas-terrorists-killed-in-gaza/>.
- 49 Reuters and ToI staff, “U.S. Intel Figures Show Hamas Has Recruited up to 15,000 New Fighters During Gaza War,” *Times of Israel*, January 24, 2025, <https://www.timesofisrael.com/us-intel-figures-show-hamas-has-recruited-up-to-15000-new-fighters-during-gaza-war/>; “U.S. Secretary of State Antony Blinken on the Biden Record in the Middle East—and What Comes Next,” transcript, Atlantic Council, January 14, 2025, <https://www.atlanticcouncil.org/commentary/transcript/us-secretary-of-state-antony-blinken-on-the-biden-record-in-the-middle-east-and-what-comes-next/>.
- 50 “After a Year of War, Hamas Is Weakened—but Far from Eliminated,” Armed Conflict Location & Event Data, October 6, 2024, <https://acleddata.com/2024/10/06/after-a-year-of-war-hamas-is-militarily-weakened-but-far-from-eliminated/>.
- 51 See figure 1 (p. 3) in Epstein, *How Hamas Manipulates*, <https://www.washingtoninstitute.org/policy-analysis/how-hamas-manipulates-gaza-fatality-numbers-examining-male-undercount-and-other>.
- 52 Israel Defense Forces, “Eliminated: Ismail al-Ghoul, a Hamas Military Wing Operation and Nukhba Terrorist,” press release, August 1, 2024, <https://www.idf.il/en/mini-sites/idf-press-releases-israel-at-war/august-24-pr/eliminated-ismail-al-ghoul-a-hamas-military-wing-operative-and-nukhba-terrorist/>, and “Information Regarding the Affiliation of the Terrorist Hossam Basel Abdul Karim to the Hamas Terrorist Organization,” press release, March 25, 2025, <https://www.idf.il/en/mini-sites/idf-press-releases-israel-at-war/march-25-pr/information-regarding-the-affiliation-of-the-terrorist-hossam-basel-abdul-karim-shabat-to-the-hamas-terrorist-organization/>; Jo Becker and Adam Rasgon, “Records Seized in Israel Show Hamas Presence in UN Schools,” *New York Times*, December 8, 2024, <https://www.nytimes.com/2024/12/08/world/middleeast/hamas-unrwa-schools.html>; Israel Defense Forces, “Documents Expose 6 Al Jazeera Journalists as Terrorists in the Hamas and Islamic Jihad Terror Organizations,” October 29, 2024, <https://www.idf.il/en/mini-sites/al-jazeera-hamas-connection/>.

- 53 Sheren Falah Saab, “Why Hamas Tries to Hide the Number of Its Militants Killed by Israel,” *Haaretz*, September 4, 2024, <https://www.haaretz.com/middle-east-news/palestinians/2024-09-04/ty-article-magazine/.premium/why-hamas-tries-to-hide-the-number-of-its-members-killed/00000191-bd7b-d13c-a39b-bfff809b0000>.
- 54 Relative reports were collected primarily through a Google Form first released January 6, 2024, then substantially revised at the start of April to require more information. The form was replaced with an online portal on May 27, 2024, and has since undergone several significant revisions.
- 55 Ben van der Merwe, “Israel-Hamas War: Gaza’s Morgue Network Has Effectively Collapsed—How Are They Recording Their Dead?” Sky News, April 4, 2024, <https://news.sky.com/story/amp/israel-hamas-war-health-system-collapse-in-gaza-leaves-authorities-struggling-to-count-the-dead-13107279>.
- 56 See these updates posted to the Health Ministry Telegram channel: January 11, 2025, <https://t.me/MOHMediaGaza/6227>, February 8, 2025, <https://t.me/MOHMediaGaza/6283>, March 19, 2023, <https://t.me/MOHMediaGaza/6366>, March 23, 2025, <https://t.me/MOHMediaGaza/6377>, and April 27, 2025, <https://t.me/MOHMediaGaza/6495>.
- 57 Merwe, “Hundreds of Names Removed,” <https://news.sky.com/story/hundreds-of-names-removed-from-official-gaza-death-list-13341928>.
- 58 Michael Spagat, “The Breakdown of Casualty Recording in Gaza Since October 2023,” Every Casualty Counts, July 30, 2024, <https://everycasualty.org/the-breakdown-of-casualty-recording-in-gaza-since-october-2023/>.
- 59 *Undocumented and Stateless: The Palestinian Population Registry and Access to Residency and Identity Documents in the Gaza Strip* (Norwegian Refugee Council, 2012), 43, <https://www.nrc.no/resources/reports/undocumented-and-stateless-the-palestinian-population-registry-and-access-to-residency-and-identity-documents-in-the-gaza-strip>.
- 60 “Population Registry,” Coordinator of Government Activities in the Territories, https://www.gov.il/en/Departments/Units/population_registrar_unit.
- 61 *Undocumented and Stateless*, 41, <https://www.nrc.no/resources/reports/undocumented-and-stateless-the-palestinian-population-registry-and-access-to-residency-and-identity-documents-in-the-gaza-strip>.
- 62 “Some Palestinians Get Legal Status After Years in Gaza Limbo,” *Times of Israel*, January 10, 2022, <https://www.timesofisrael.com/some-palestinians-get-legal-status-after-years-in-gaza-limbo/>.
- 63 Michal Margalit, “How Do You Calculate the Check Digit?” *Yedioth Ahronoth*, February 6, 2014, <https://www.ynet.co.il/articles/0,7340,L-4483052,00.html>.

The Author



GABRIEL EPSTEIN is a policy and communications associate at Israel Policy Forum. He previously served as a research assistant at The Washington Institute, where he authored the 2024 study *How Hamas Manipulates Gaza Fatality Numbers: Examining the Male Undercount and Other Problems*. His analysis has also appeared in the *Washington Post*.



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