

STOLEN FUTURES

The hidden toll
of child casualties
in Syria

About Oxford Research Group

Oxford Research Group (ORG) is a leading independent think-tank, non-governmental organisation and registered charity, based in London. ORG has been influential for thirty years in promoting the idea of sustainable approaches to global security as an alternative to violent confrontation, through original research, wide-ranging dialogue, and practical policy recommendations.

ORG is committed to the principle that every life lost to armed violence should be properly recognised. For this to become possible, every casualty of armed violence, throughout the world, must be promptly recorded, correctly identified and publicly acknowledged. To bring this closer to fulfilment, the Every Casualty programme at ORG (www.oxfordresearchgroup.org.uk/rcac; project website: www.everycasualty.org) is developing an improved understanding of the range of available casualty recording practices, along with guidance for their implementation. This has included extensive research into existing casualty recording work, which is contributing towards the identification and development of standards and good practice able to be implemented by a range of actors, including non-governmental organisations, states, and inter-governmental organisations alike.

In addition to its research, ORG facilitates an International Practitioner Network of casualty recording organisations (www.everycasualty.org/practitioners/ipn) and is at the forefront of integrating policy goals into existing policy frameworks at the national and international level.

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Cover photo

Syrian mother Jadiya grieves as she sits on March 17, 2012 with her two sons, one of them holding a picture of his four-year-old brother Iyab who was killed in an attack by government forces on the area on February 27, in Sermin, just eight kilometres (five miles) east of the rebel stronghold of Idlib, and not far from the Turkish border. Ricardo Garcia Vilanova/AFP/Getty Images

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A boy sits at his parents' house, damaged by shelling by forces loyal to Syria's President Bashar al-Assad, in Talbiseh, near Homs August 31, 2012. Picture taken August 31, 2012. REUTERS/Shaaam News Network/Handout

EXECUTIVE SUMMARY

The growing death toll in the Syrian conflict has been referred to with deep concern by the United Nations and by government officials, the media and civil society organisations around the world. It can be argued that these continually mounting numbers have become the predominant measure of the conflict's scale and severity.

Most casualty figures in circulation originate from a small number of Syrian civil society groups which began recording deaths and human rights violations in response to the conflict, and are to varying degrees aligned with the opposition movement in Syria. Instead of simply issuing statistics, these groups publish detailed lists of each individual killed, in most cases including their name and the circumstances of their death, with the category of weapon that caused it.

These very specific details, and their open publication, lend the casualty recording projects a degree of credibility.¹ This is because they provide the basis and a starting point from which the deaths they report can be investigated, and verified – if not immediately, then post-conflict. Many of the higher-profile events these details describe are of course already corroborated by other sources, including the world's media. Nonetheless, simple totals throughout this study and elsewhere should be treated with caution and be considered provisional: briefly put, it is too soon (and outside the scope of this study) to say whether they are too high or too low.

What the details contained in these databases also provide is clearer insight into the vulnerabilities of the civilian population exposed to conflict in Syria.

Earlier studies² combined multiple databases to obtain more comprehensive figures for the conflict's civilian and combatant death toll than are found in any single database. Taking a similar approach, the present study uses information on demographics and causes of death recorded in four casualty databases to shed light on the lethal effects of the conflict on one particular civilian group: children.³

Our findings are accompanied by an examination of the Syrian casualty recording organisations that

produced the databases, all of which agreed to be interviewed for this study on questions relating to data quality. We also describe the methods, scope and limitations of the present study.

Based on the data on children published in these four databases, our principal findings are that:

- By the end of August 2013, 11,420 children aged 17 years and younger had been recorded killed in the Syrian conflict, out of a total of 113,735 civilians and combatants killed.
- Of the children killed, boys outnumbered girls by more than 2 to 1 overall, with the ratio of boys to girls close to 1:1 among infants and children under 8 but rising to more than 4 boys to every girl among 13- to 17-year-olds.
- The highest number of child deaths occurred in the governorate of Aleppo, where 2,223 were reported killed. When measured against its population size (about one-fifth of Aleppo's), the deadliest governorate for children was Daraa, where 1,134, or roughly 1 in 400, children were reported killed.
- By far the primary cause of death reported for children was explosive weapons, killing 7,557 (71%) of the 10,586 children whose specific cause of death was recorded.
- Air bombardment was given as the cause of death for 2,008 of the children reported killed by explosive weapons.
- Small-arms fire was reported as the cause of death for 2,806 (26.5%) of the 10,586 children for whom cause of death was recorded, including 764 cases of summary execution and 389 cases of sniper fire with clear evidence of children being specifically targeted.
- The four databases between them reported 128 children killed in the chemical attacks in Ghouta on 21 August 2013.
- At least 112 cases of children tortured and killed were reported, including some of infant age.

We conclude that the conflict in Syria has had (and as of the time of writing, continues to have) a large-scale lethal impact on the country's children. In the absence of other sources of information, the extent and nature of this impact on children (and on Syrians generally) is known only thanks to the efforts

¹ The term "casualty" throughout this report is used to refer to persons directly killed in violence. The injured are outside our scope, but deaths can also be taken as an indicator of the presence of victims of wounding: see section below on explosive weapons.

² Updated Statistical Analysis of Documentation of Killings in the Syrian Arab Republic. Commission by OHCHR. Megan Price, Jeff Klingner, Anas Qtiash and Patrick Ball. HRDAG. <http://www.ohchr.org/Documents/Countries/SY/HRDAG-Updated-SY-report.pdf>

³ Defined in this report as anyone aged 17 and below.

of a handful of Syrian civil society groups that record the conflict's casualties on a daily basis.

Our recommendation to all parties concerned with the victims of the Syrian conflict is that such information gathering efforts should be joined and supported, including by States. The chemical attacks in Ghouta are already under investigation by the international community; the many other ways in which civilians, including children, have been killed throughout this conflict warrants similarly serious investigation.

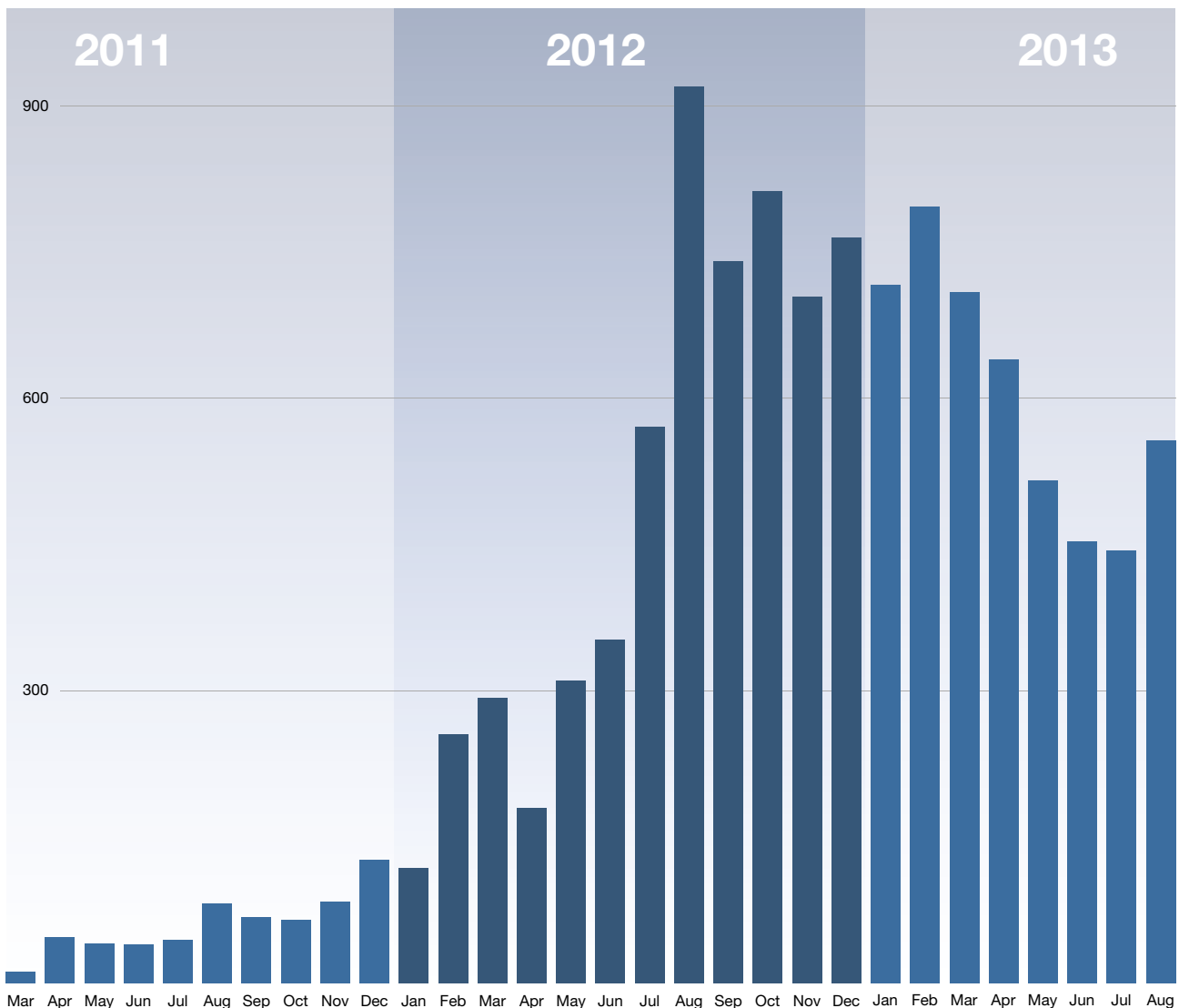
Our specific recommendations for States and conflict parties, in brief, are that:

- All armed forces and groups operating in the Syrian conflict must refrain from targeting civilians, including children.

- All armed forces and groups should receive training in how to avoid putting civilians and children at risk.
- All armed forces and groups should be trained in, and carry out, the recording of casualties, including those that they cause, and make these records public.
- Persons and organisations contributing to casualty recording (including journalists) should not be hindered from going about their work by any armed forces or groups.

As the highest priority for children, in our view, is to remove them from all the inherent dangers of war, we end this report with an overview of options other than military intervention for bringing the Syrian conflict to an end.

11,420 children killed in 30 months of Syrian conflict



INTRODUCTION AND BACKGROUND

The armed conflict in Syria began in March 2011. By the end of August 2013, the four Syrian civil society organisations whose data forms the basis of this report had between them recorded the loss of 113,735 lives, of whom 11,420 were children.⁴ There are uncertainties attached to these and other absolute numbers in this study, so they should be considered provisional, pending independent verification (which may not be completely feasible until post-conflict) and subject to revision.

Casualty recording in conflict involves the continuous and systematic collection of detailed information surrounding violent deaths; at its best, it sets out to establish not only *how many* have been killed, but *who* died and *how, when* and *where* they were killed. Such detailed information, often difficult to obtain, has proved essential to achieving new insight into the patterns of harm suffered by civilians in various conflicts. Broad but important patterns can be observed and established with reasonable certainty even where documentation is neither complete nor perfect.⁵ It is on such consistent patterns that this study is focused, with specific attention to the impacts that various weapons and methods of war have on children.

The grim and relentless rise in casualty numbers seems set to continue; likely to remain relatively constant, however, are the patterns of harm to children identified in this study, unless there is a very marked change in the Syrian conflict.

The data collected and published by the four Syrian casualty recording organisations very properly goes beyond bare statistics to include the names and demographics of individuals killed, the date, location and circumstances of their deaths, and the weapons that killed them. Whilst attempting comprehensive casualty recording during conflict can be extremely

challenging, certain standards in good practice can still be achieved. Casualty data can be lost forever or emerge too late to inform humanitarian responses, such as relief efforts, if no casualty recording at all is undertaken during conflict.⁶ Some of the events the databases describe are corroborated by media reports, but with independent media access severely restricted in Syria,⁷ databases such as these are currently the world's best-documented and most extensive sources of casualty data for the country's conflict.

The Every Casualty programme⁸ at Oxford Research Group (ORG) is committed to the principle that no individual should be killed in armed violence without his or her death being recorded, and is working to build the political will for this internationally. The programme also works on enhancing the technical and institutional capacity for casualty recording, and part of this work involves hosting an International Practitioner Network of more than 45 casualty recording organisations.⁹ The four Syrian organisations whose data is used in this report are among the newest members of this network – the Syrian Center for Statistics and Research (CSR-SY); Syria Tracker (ST); the Syrian Network for Human Rights (SNHR); and the Violations Documentation Center (VDC).¹⁰

In order to extract additional value from their hard-won information, ORG commissioned Conflict Casualties Monitor, the UK company that runs the Iraq Body Count (IBC) project,¹¹ to undertake a new analysis focusing on victim demographics, along the lines of earlier models of such work by IBC (2005),¹² including in collaboration with others as published in the *New England Journal of Medicine* (2009),¹³ *PLOS Medicine* (2011)¹⁴ and *The Lancet* (2011).¹⁵ For the purposes of this study, the Syrian databases were combined into a single data set suitable for quantitative analysis.

⁴ See the section on 'Methods and research notes' on how these figures were obtained, and their scope and limitations.

⁵ See, eg, *Violent Deaths of Iraqi Civilians, 2003–2008: Analysis by Perpetrator, Weapon, Time, and Location*, *PLOS Medicine*, 2011 www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000415

⁶ For a detailed review of established and emergent criteria see 'Key standards for effective recording' in *Towards the Recording of Every Casualty*, p. 16 (Oxford Research Group, 2012) <http://ref.ec/towards>

⁷ See, eg, www.cpj.org/2013/02/attacks-on-the-press-in-2012-syria.php and <http://en.rsrf.org/syria.html>

⁸ www.everycasualty.org

⁹ <http://ref.ec/ipn>

¹⁰ Originally data from five member organisations was part of this study, but it was discovered that the database from one of these (Syrian Shuhada [SS]) was identical to another's (Syria Tracker [ST]). SS were unable to participate in our survey of recording organisations, so discussion of the SS/ST data is based on the responses we received from ST.

¹¹ www.iraqbodycount.org

¹² www.iraqbodycount.org/analysis/reference/pdf/a_dossier_of_civilian_casualties_2003-2005.pdf

¹³ www.nejm.org/doi/full/10.1056/NEJMp0807240

¹⁴ www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000415

¹⁵ [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(11\)61023-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(11)61023-4/fulltext)



Issa, 10 years old, carries a mortar shell in a weapons factory of the Free Syrian Army in Aleppo, September 7, 2013. Issa works with his father in the factory for ten hours every day except on Fridays. REUTERS/Hamid Khatib

These databases were previously used in combined form by the UN's Office of the High Commissioner for Human Rights (OHCHR) to obtain a number for total casualties of the Syrian conflict.¹⁶ Conforming and combining ('merging') differently structured databases while excluding duplicate data is technically challenging and imperfect, as we describe below, but was necessary for many of the analyses. Its main advantage is that combining databases gives a fuller picture than that provided by any single database from the organisations recording casualties in Syria. Any errors this may have introduced are our responsibility and not theirs.

The analyses laid out in this report show that the most commonly identified cause of death of children was the use of explosive weapons, which killed 71% of the 10,586 children for whom a cause of death was recorded – children killed by bombs and shells in their homes, in their communities, and in day-to-day activities such as waiting in bread lines or attending

school. The second most frequent cause of death was small-arms fire, which killed 26.5% – children caught in crossfire, targeted by snipers or summarily executed. Other documented causes of death presented in this report show children killed in detention, by torture, and by chemical weapons.

Our analysis provides breakdowns for these and related causes of deaths by age and gender, as well as a geographical overview of where most children were reported killed, with trend lines showing the most deadly periods of the war so far for children.

Without the meticulous and constant efforts of the casualty recording organisations, the findings in this report on the patterns of harm suffered by children in the Syrian conflict would be unavailable for analysis or discovery, or for informing the international community and those trying to alleviate the humanitarian consequences of the conflict, and to bring it to an end.

¹⁶ Megan Price, Jeff Klingner, Anas Qtiash and Patrick Ball, *Updated Statistical Analysis of Documentation of Killings in the Syrian Arab Republic*, commission by OHCHR, Human Rights Data Analysis Group (HRDAG), accessed on 8 October 2013, www.ohchr.org/Documents/Countries/SY/HRDAG-Updated-SY-report.pdf

ANALYSIS AND FINDINGS

Age and gender of children killed

Of the 11,420 named children reported killed in the merged dataset, 7,841 (69%) had their age recorded by year, with the remaining 3,579 (31%) classified as 'child' without their age being recorded. Gender was recorded for every child.

Of the 7,841 children whose ages were recorded, age and gender breakdowns were as shown in the table below.

Overall, boys killed outnumbered girls killed by more than two to one. The ratio of boys to girls killed is closer to equal among younger children (7 years and below) but rises steeply as boys grow older.¹⁷

Girls remain vulnerable to the same kinds of powerful, highly destructive and indiscriminate weapons that are able to affect younger children and families attempting to find shelter and protection from the conflict in their homes. When girls are killed, they are far more likely to have been killed by explosive weapons (which killed 2,728, or 74% of girls) than by small arms (which killed 627, or 17%).

The data also indicates that as boys rise in age, so does their likelihood of being killed.

This may be due partly to the reasons given above. Older boys are physically and visually more likely to be mistaken for adult males, or to be considered potential threats and therefore deliberately targeted, or to be involved in protests or in combat and combat-support roles.¹⁸

The argument that older boys are more often deliberately targeted is borne out by our analysis, which shows that whereas indiscriminate weapons such as explosives, including artillery and air bombardment, accounted for most child deaths overall, weapons that are typically more selective (small arms, including as used in summary executions and sniper fire) accounted for most of the deaths among boys aged 13–17 (1,113 killed by small arms compared with 1,032 by explosives).

Delving deeper, the 13- to 17-year-old male group suffered nearly half of all child deaths at the hands of snipers (158 out of 339 cases where age was recorded), none of which deaths is likely to have been an accidental killing. Finally, this group also suffered the vast majority of recorded torture cases (see torture section below). This data indicates that the 13- to 17-year-old male group, though little discussed, may represent the most at-risk of all children in the Syrian conflict.

Child age and gender breakdowns	Male + Female	Male	Female	Male:Female ratio
All reported as 'child'	11,420	7,748	3,672	2.1:1
Age-recorded cases	7,841	5,451	2,390	2.3:1
0–2	558	297	261	1.1:1
3–7	1,598	882	716	1.2:1
8–12	2,751	1,873	878	2.1:1
13–17	2,934	2,399	535	4.5:1

¹⁷ This may indicate that boys spend more time in at-risk situations (including outdoors or with their fathers, older brothers, uncles, etc), but confirming this would require further study by other means.

¹⁸ It is worth noting Syria's accession to the Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict, 25 May 2000, whose Article 1 obligates "States Parties to take all feasible measures to ensure that members of their armed forces who have not attained the age of 18 years do not take a direct part in hostilities," and Article 2 that they "shall ensure that persons who have not attained the age of 18 years are not compulsorily recruited into their armed forces," and whose Article 4 states that "Armed groups that are distinct from the armed forces of a State should not, under any circumstances, recruit or use in hostilities persons under the age of 18 years" (although the latter has been criticised by the ICRC for being imposed as a moral, not legal, obligation). <http://www.icrc.org/ihl.nsf/INTRO/595?OpenDocument>

Geographical distribution of children killed

Location of death at the governorate level was available for 11,175 of the 11,420 children reported killed in the combined data set.

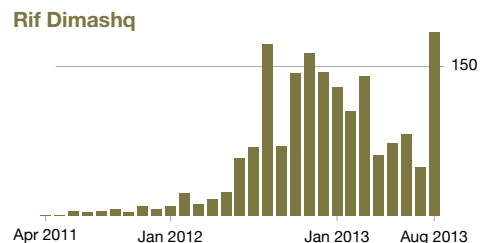
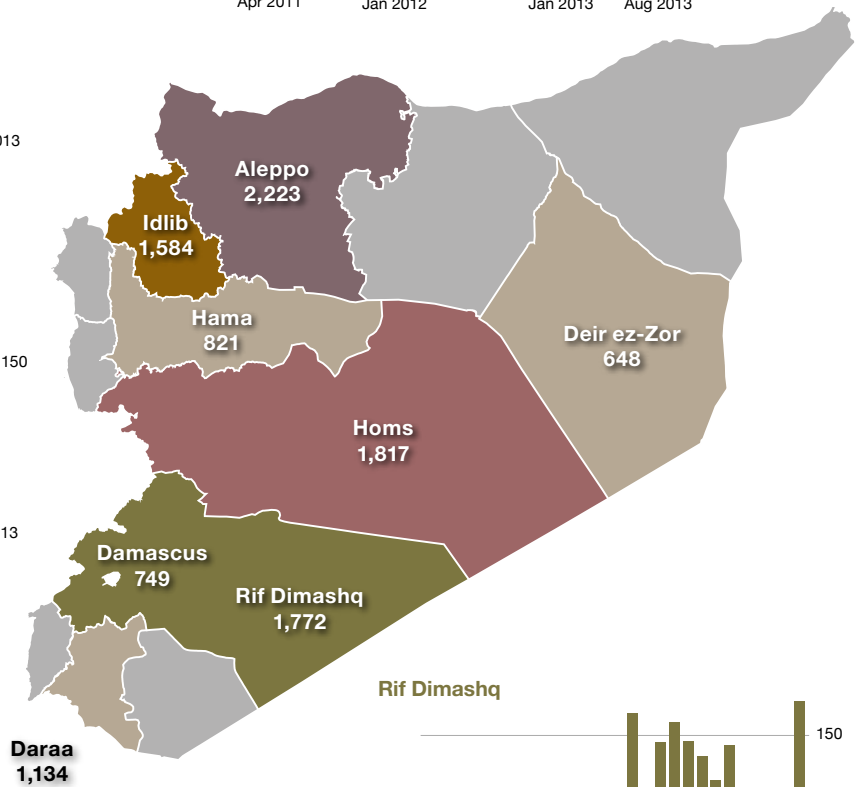
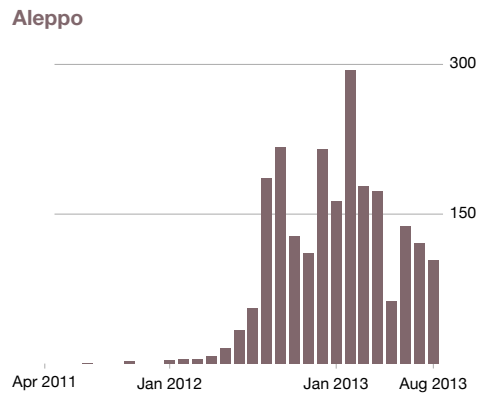
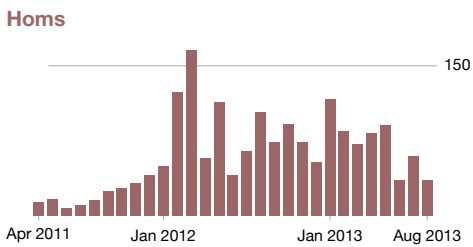
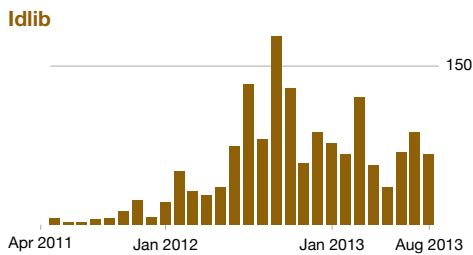
The vast majority of reported child deaths occurred in 8 of Syria's 14 governorates (administrative regions). Between them, these eight governorates reported 10,748 deaths, varying from just under 650 in Deir ez-Zor to over 2,200 in Aleppo, which saw the most child deaths by a significant margin.

Child deaths in the remaining six governorates totalled 427. However, the casualty recorders who compiled the original data on which this analysis is based admit that their ability to record deaths is more limited in areas loyal to or under Syrian government control – so that children (and others) killed in these areas are under-represented.

The absolute number of child deaths was fairly evenly distributed among the governorates placed 2nd, 3rd and 4th after Aleppo. This governorate alone accounted for 19.9% of child deaths, and is followed by Homs (16.3%), Rif Dimashq (also known as Rural Damascus) (15.9%) and Idlib (14.2%).

Graphs: children killed per month in four Syrian governorates.

Map: the eight Syrian governorates with most child casualties.



Eight deadliest governorates by population size	Children killed	% of total child deaths	Population	1 in how many children killed?
Daraa	1,134	10.1%	1,027,000	408
Idlib	1,584	14.2%	1,501,000	426
Homs	1,817	16.3%	1,803,000	447
Rif Dimashq	1,772	15.9%	2,836,000	720
Hama	821	7.3%	1,628,000	892
Deir ez-Zor	648	5.8%	1,239,000	860
Aleppo	2,223	19.9%	4,868,000	985
Damascus	749	6.7%	1,754,000	1,054

These deaths were unevenly distributed over time, reflecting the general course of the conflict. Aleppo, for example, experienced comparatively low levels of child deaths until heavy fighting broke out there in the spring of 2012, after which it rapidly overtook all other governorates to accumulate the country's highest toll of children's lives. (See monthly trend graph from March 2011 to August 2013 in 'Executive summary', above.)

However, when the number of children killed is considered on a per capita basis, with the population size of each governorate¹⁹ taken into account, a different picture emerges (see table above).

The per capita analysis indicates that although Syria's most populous governorate of Aleppo has seen the largest absolute number of child deaths, children living in the less populous governorates of Daraa, Idlib and Homs were roughly twice as likely to be killed as their counterparts in Aleppo. Thus, the per capita numbers can provide a more telling picture of the rate or intensity of deadly violence experienced by children in each governorate. By this measure, our data indicates that Daraa has been Syria's deadliest for children. If, as is typical of the region, children aged 0–17 years constitute up to 45% of the population,²⁰ then in Daraa something like 1 in 400 children has been killed since the conflict began.

Children killed by explosive weapons

Cause of death could be determined for 10,586 (93%) of the 11,420 children reported killed in our combined data set. Of these 10,586 deaths, the majority by far (7,557, or 71%) were caused by explosive weapons.

Of the deaths caused by explosives, 2,008 (26.6%) were recorded as due to air bombardment, and 1,005 (13.3%) as due to artillery fire, including from tanks. Nearly all of the remaining 4,544 child deaths from explosive weapons were recorded as due to "shelling" (60%), a catch-all term in Arabic that may have been used in cases where the source or type of explosive weapon could not be determined. Therefore, the category "shelling" might have included the weapons already mentioned above as well as others, and must be considered to indicate only that explosive weaponry was used, and not which type.

As with other types of weapons, older children outnumber younger ones among the victims of explosives. However, the deaths recorded in our data set indicate that children aged 12 and under who are killed are far more likely to have been killed by explosives than by any other weapons. The first table overleaf shows the proportion in each age group, among children for whom both the age and cause of death could be determined, where explosive weapons were the cause of death.

This pattern is again evident, but to a more marked degree, for air bombardment (see second table overleaf).

The absolute number of babies and infants killed by explosives is, as one might expect, lower than for older and more exposed children. However, the data above indicates that no amount of parental or familial care and protection is sufficient to shield them from the use of explosive weapons in populated areas.

The explosive weapons categories here are broad, owing to the limited amount of detail generally

¹⁹ Population estimates from Central Bureau of Statistics 2011 projection of 2004 census <http://www.citypopulation.de/Syria.html>

²⁰ http://www.unicef.org/infobycountry/syria_statistics.html

Children recorded in age group:	No. whose cause of death was recorded	No. killed by explosive weapons	% killed by explosive weapons
0–2	490	390	80%
3–7	1,480	1,201	81%
8–12	2,536	1,890	75%
13–17	2,647	1,395	53%

Children recorded in age group:	No. whose cause of death was recorded	No. killed by air bombardment	% killed by air bombardment
0–2	490	143	29%
3–7	1,480	367	25%
8–12	2,536	448	18%
13–17	2,647	291	11%

available in the source databases. More extensive investigation would be needed to understand the effects that different types of explosive weapons have had on the civilian population of Syria, including their particular impacts on children. One important area not covered in this report are children who survived blast wounds, and very likely outnumber those killed.²¹

Children killed by small arms

Small-arms fire was recorded as the cause of death of 2,806 (26.5%) of the 10,586 children for whom cause of death could be analysed. These deaths include 764 cases of summary execution and 389 cases of sniper fire. Although it may happen that children are unintentionally killed by stray or ricocheting bullets, lack of intention cannot be argued for these two methods of killing.

Summary execution (which here includes killings after capture and detention as well as field executions, in some cases with torture) was more often carried out on boys than on girls (566 compared with 198). While some cases of summary execution involved a method other than bullets to deliver the death blow, bullets are most frequently mentioned, and captors and executioners will almost certainly have been equipped with small arms.

Among the 402 summarily executed boys for whom a precise age was recorded, 86.8% were aged

between 8 and 17 (349 of 402 recorded cases); of the executed girls, 71% were in this age band (78 of 110).

Sniper fire was again more often directed against boys than girls (312 compared with 77 cases), and again more often against older boys than younger, with boys in the 13–17 age group alone accounting for 158 (or 57.6%) of the 312 boy victims of snipers for whom age was specified.

Small arms are by design relatively ‘discriminating’ precision weapons, with sniper fire and close-range executions being the most extreme manifestation of this. Our data set provides evidence of intentionality even in their more general use against children, if the targeting of older boys is taken as an indicator of intentionality (see table overleaf).

Although it is possible that older boys face greater risk of death by spending more time outdoors during times of conflict than younger children and girls, the much higher proportions in which they are shot suggests that this is not solely an environmental effect. Moreover, it is difficult to see how this many children of any age or gender could be killed purely in small-arms ‘crossfire’, from which it is at least possible to take cover and hide. Further research would be required to explore the full range of factors that could be involved, including the possible engagement of boys in combat or combat support roles.

²¹ ‘Mortality associated with use of weapons in armed conflicts, wartime atrocities, and civilian mass shootings: literature review’, *British Medical Journal*, 14 August 1999; 319(7207): 407–410. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC28193/>

The effect of explosive weapons used in populated areas

Explosive weapons include explosive ordnance such as mortars, rockets, artillery shells, and air-dropped bombs, as well as improvised explosive devices (IEDs).²² These weapons are designed to function through blast and fragmentation effects that kill and injure people in the area around the point of detonation. The area of effect of an explosive weapon varies according to its size, its type, the way it is delivered and other factors. This area of effect can be very wide and any person within it can be hit by the blast or projected fragments and debris.²³

Action on Armed Violence, a UK-based non-governmental organisation (NGO), has released data for 2012 showing that when these weapons are used in populated areas, civilians make up on average 91% of the victims.²⁴ In the data gathered for this report, the use of explosive weapons in populated areas is the largest cause of death by a significant margin and shows the grave impact that this practice has on children and their families.

The International Network on Explosive Weapons²⁵ (INEW) calls for stronger international standards to curb the devastating impact on civilians of the use of explosive weapons in populated areas. In recent years, UN Secretary-General Ban Ki-moon, UN Emergency Relief Coordinator Valerie Amos, the International Committee of the Red Cross (ICRC), Special Representative of the Secretary-General for Children and Armed Conflict, Leila Zerrougui, and more than 30 states have highlighted the use of explosive weapons in populated areas as a key humanitarian concern because of the devastating harm caused to civilians and infrastructure.²⁶ Stopping the use in populated areas of explosive weapons with wide-area effects would greatly strengthen the protection afforded to civilians, including children, living in zones of conflict.

Although guided and so-called “smart” weapons also cause unintended harm to civilians, explosive weapons used in the Syrian conflict are of a particularly indiscriminate nature, with consequences to match. A number of organisations have highlighted the devastating impact of their use in Syria: in March 2013, Amnesty International reported that

“Imprecise weapons designed for the battlefield are killing, maiming and displacing growing numbers of civilians – many of them children. Unguided air-delivered bombs, artillery, rockets, and ballistic missiles which cannot be aimed at specific targets and do not distinguish between military targets and civilian objects, and internationally banned cluster munitions are being used daily against civilian residential areas in towns and villages.”²⁷

In April 2013, Human Rights Watch documented indiscriminate air strikes killing and injuring civilians in the report, *Death from the Skies*.²⁸ Ballistic-missile attacks in populated areas documented by Human Rights Watch between February and July 2013 killed 100 children.²⁹

Human Rights Watch has also documented 152 separate locations where cluster munitions were used between July 2012 and June 2013.³⁰ Under the 2008 Convention on Cluster Munitions, this type of explosive weapon is now banned.³¹

The use of explosive weapons in populated areas not only kills children, but results in their being injured or maimed, and denies them access to healthcare or safe access to school. It causes long-term psychological scars, blocks life-saving humanitarian aid, displaces children from their homes and separates them from their communities, leaving them vulnerable to exploitation and abuse.

²² For a more extensive list of explosive weapons see *INEW Advocacy Guide*, www.inew.org/site/wp-content/uploads/2012/09/INEW_advocacy_guide_FINAL.pdf accessed 1 October 2013.

²³ For more on ‘wide-area effect’ see Article 36, ‘Heavy weapons and civilian protection’, 2012, www.article36.org/wp-content/uploads/2012/08/Heavy-weapons-and-civilian-protection.pdf accessed 5 October 2013.

²⁴ Action on Armed Violence (AOAV), *An Explosive Situation: Monitoring explosive violence in 2012*, AOAV, 2013, p 6

²⁵ See www.inew.org/ for members.

²⁶ For updated list of supportive statements see <http://www.inew.org/acknowledgements>

²⁷ Amnesty International, ‘Amnesty International Briefing – Syria: Government Bombs Rain on Civilians’, 13 March 2013 www2.amnesty.org.uk/sites/default/files/briefing_govt_force_abuses.pdf accessed 1 October 2013

²⁸ Human Rights Watch, *Death from the Skies*, Human Rights Watch, 2013, www.hrw.org/reports/2013/04/10/death-skies accessed 1 October 2013

²⁹ Human Rights Watch, ‘Syria: Ballistic Missiles Killing Civilians, Many Children’, Human Rights Watch, 5 August 2013, www.hrw.org/news/2013/08/04/syria-ballistic-missiles-killing-civilians-many-children accessed 1 October 2013

³⁰ Human Rights Watch, ‘Cluster Munitions: Nations Condemn Syrian Use’, 13 September 2013, www.hrw.org/news/2013/09/13/cluster-munitions-nations-condemn-syrian-use accessed 1 October 2013

³¹ Cluster munitions were banned because of their wide-area effects and because many of their sub-munitions fail to explode, leaving a legacy of deadly unexploded ordnance. For more information on the Convention on Cluster Munitions see www.stopclustermunitions.org

Children killed by small-arms fire	Male	Female
All children	2,179	627
Where age recorded	1,796	424
0–2	49	30
3–7	170	96
8–12	464	168
13–17	1,113	130

Small arms

Small arms are weapons that are qualified by their portability and include weapons such as revolvers and self-loading pistols, rifles and carbines, assault rifles, sub-machine guns and light machine guns.³² These arms have both military and civilian use. In the databases used in this study, “shooting” or “gunshot”, “sniper fire” and “field/summary execution” were identified as the cause of death for a significant percentage (roughly one in four) of children killed.

The proliferation of small arms in Syria has contributed to an increase in overall violence, but has also affected civilians, as our data set shows. As fighting becomes fiercer in the cities and towns of Syria, the demand for small arms is matched by an increasing volume and availability of them, in addition to existing military and civilian arsenal in Syria being seized by opposition armed forces.³³ The question of how (and from where) a fresh supply of small arms is entering Syria is complex, with many countries funding opposition members to acquire arms illegally and some countries continuing to supply arms, through arms transfers to the government.³⁴

Over the past ten years, an international normative framework on small-arms control has been developing, with a number of legally binding

and non-binding instruments being adopted by the UN. This includes the Firearms Protocol, the UN Programme of Action on Small Arms and Light Weapons (UNPoA), the International Instrument to Enable States to Identify and Trace Illicit Small Arms and Light Weapons (ITI), and the newly adopted Arms Trade Treaty (ATT).³⁵ Together, these instruments set out a range of measures to manage all aspects of the small-arms proliferation problem, including: control of the market of components and ammunition; brokering; tracing; manufacturing; disarmament, demobilisation and reintegration (DDR); confiscation, deactivation and disposal; and public awareness of the problem. The Syrian government is committed to only one of these instruments, the UNPoA,³⁶ and moreover has not shown substantive commitment to the implementation of the framework that sets out to control small-arms transfers.³⁷ When the ATT enters into force, accountability for the trade and transfer of small arms will not only apply to countries that wish to acquire small arms; it will become illegal for any State Party to the Treaty to supply arms to a recipient that attacks civilians or civilian targets, or that commits any other violations of international humanitarian law. This provision would apply to supplying any of the armed forces (both state and non-state) that are engaged in the conflict in Syria.³⁸

³² ‘Definitions of Small Arms and Light Weapons’, Small Arms Survey, www.smallarmssurvey.org/weapons-and-markets/definitions.html accessed 2 October 2013

³³ See Pieter D. Wezeman, ‘Arms transfers to Syria’, *SIPRI Yearbook 2013*, Chapter 5, Section 3, accessed 8 October 2013. <http://www.sipri.org/yearbook/2013/files/sipri-yearbook-2013-chapter-5-section-3>

³⁴ Ibid.

³⁵ Small Arms Survey, *The Arms Trade Treaty: A Step Forward in Small Arms control?* Research Notes Number 30, June 2013, www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-30.pdf accessed 8 October 2013

³⁶ Syria has committed itself to supporting the UNPoA as a result of a UN consensus decision. See UNGA, ‘Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons in All Its Aspects’, United Nations General Assembly, A/CONF.192/15, New York: UN General Assembly, 20 July 2001.

³⁷ PoA-ISS, ‘Country Profiles, Syrian Arab Republic’, www.poa-iss.org/CountryProfiles/CountryProfileInfo.aspx?Col=188&pos=1000 accessed 8 October 2013

³⁸ United Nations Office for Disarmament Affairs, *Arms Trade Treaty*, www.un.org/disarmament/ATT/ accessed 5 October 2013

Children killed by chemical weapons

The deaths on 21 August 2013 involving chemical weapons in the town of Ghouta on the outskirts of Damascus represent the single most widely publicised casualty event of the Syrian conflict. Despite this, few detailed casualty statistics regarding this event have so far emerged in the public domain. The databases on which the present study is based do, however, contain some of this information, including on children, and we examine it here. As with the torture cases further below, duplicate and unique cases of deaths from chemical weapons reported in the databases were ultimately determined by a human reader/analyst.

One of the databases (ST) had not been updated to include August events when accessed for this study.

The information below is therefore based solely on the three databases that listed victims of the attack, by age as well as name (CSR-SY, SNHR and VDC). Details (including of precise age) are sparse in SNHR and VDC but less so in CSR-SY; however, CSR-SY only listed 15 cases of child age in total. Investigations of this incident are ongoing, and more information may emerge in the coming months.

Deaths from chemical weapons are of course exceptional in the context of the conflict as a whole, the vast majority of whose victims have been killed by more typical means. The originating databases also listed eight further cases of children dying as a result of exposure to chemical weapons, but each of these entries contained the caveat “to be verified” or “to be validated”, and are not included in this analysis. Consequently, the data in the table below, showing

Children killed by chemical weapons	Listed in two or more databases	Listed in CSR-SY only	Listed in SNHR only	Listed in VDC only	Totals
Male	48	6	4	5	63
Female	53	4	8	0	65
Male and female	101	10	12	5	128



People run upon hearing a nearby plane bombing during a protest against Syrian President Bashar al-Assad in the al-Katerji Tariq district in Aleppo, February 22, 2013. REUTERS/Muzaffar Salman

a total of 128 children killed, refers exclusively to the events in Ghouta.

There is another way in which these deaths are atypical: this is the only analysis of child deaths in the combined data set in which the recorded

number of females is higher than that of boys, which may indicate that the avoidance of these highly indiscriminate weapons is unaffected by any demographic distinctions among children.

Chemical weapons

The chemical weapons attacks in Ghouta shocked the international community and prompted significant media attention on the devastation and harm caused to civilians. Pictures and videos of dead and dying children displaying symptoms of chemical weapons attacks appeared frequently in the media, triggering a strong international reaction from civil society and heads of state.³⁹

Following these events the UN was permitted to investigate the attacks in order to ascertain the details surrounding the event. The report of the investigators concluded that chemical weapons had been used on a large scale, "resulting in numerous civilian casualties including children".⁴⁰ So far it has been difficult to verify the number of casualties caused by the attack.

The attacks that took place on 21 August were a violation of international law, particularly the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases,⁴¹ and the 1998 Chemical Weapons Convention (CWC), which prohibits the production, stockpiling, and use of chemical weapons in warfare.⁴²

The international community has come together to encourage Syria to join the CWC and comply

with its provisions, with the condition that all chemical weapons supply in Syria should be destroyed immediately in order to prevent the eventuality of their further use. The Syrian government agreed to be a signatory to the CWC and has allowed the Organisation for the Prohibition of Chemical Weapons (OPCW) to monitor the destruction of chemical weapons stockpiles, which is now under way.⁴³ At the time of writing, the OPCW had declared that it had inspected 21 of the 23 declared chemical weapons sites in Syria and announced that Syria had met the first important deadline in the disarmament process by completing the functional destruction of all production facilities and chemical weapons mixing/filing equipment.⁴⁴ As for the two other sites which the OPCW could not inspect, for security reasons, production equipment from these two sites has been moved to other declared sites inspected by the OPCW. Although this is an encouraging step, the next step is for Syria to agree on a comprehensive and detailed plan on the destruction of over 1,000 tonnes of toxic agents and munitions, which will involve the difficult and dangerous task of transporting and eliminating toxic agents in the midst of an ongoing conflict.⁴⁵

³⁹ This included sombre but expert responses such as that from Physicians for Human Rights, <http://physiciansforhumanrights.org/press/press-releases/phr-experts-comment-on-video-footage-from-syria.html>

⁴⁰ 'Report on the Alleged Use of Chemical Weapons in the Ghouta Area of Damascus by the United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic', www.un.org/disarmament/content/slideshow/Secretary-General_Report_of_CW_Investigation.pdf accessed 2 October 2013

⁴¹ Ibid.

⁴² Organisation for the Prohibition of Chemical Weapons, 'Fundamental provisions', www.opcw.org/chemical-weapons-convention/about-the-convention/ accessed 2 October 2013

⁴³ Mariam Karouny, 'Destruction of Syrian chemical weapons begins: mission', Reuters, 6 October 2013, www.reuters.com/article/2013/10/06/us-syria-crisis-experts-idUSBRE99508920131006 accessed 8 October 2013

⁴⁴ 'Syria completes destruction activities to render inoperable production facilities and mixing filing plants', OPCW Press Release, 31 October 2013, <http://www.opcw.org/news/article/syria-completes-destruction-activities-to-render-inoperable-chemical-weapons-production-facilities-a/> accessed 1 November 2013

⁴⁵ Dominic Evans, 'Syria meets deadline to destroy chemical production facilities', 31 October 2013, www.reuters.com/article/2013/10/31/us-syria-crisis-chemical-idUSBRE99U08N20131031?feedType=RSS&feedName=topNews&utm_source=dlvr.it&utm_medium=twitter&dlvrit=992637 accessed 1 November 2013

Children tortured and killed

The combined data set reported 764 summary executions of children with (initially) 117 cases categorised as involving torture, including that of extremely young children. A manual review and merge of the databases (by a human reader/analyst), focusing solely on reports of torture, was carried out. This resulted in a revised total of 112 torture cases, eliminating some duplicate or non-torture cases and adding others that had been missed in the automated merge process. It is these manually

derived 112 reported torture cases on which the present analysis is based.

Of these 112 children, 109 were boys and 3 were girls. Age was given for 106 cases – 104 of the boys and 2 of the girls. Of the 106 cases where age was reported, the vast majority (89, or 84%) were boys aged 13–17. Most alarmingly, torture was also present in the cause-of-death descriptions for children aged only 1, 3 (two cases), 4 (two cases), 9 (two cases) and 10 (six cases).

106 child torture cases where age known	Male	Female
0–2	1	0
3–7	3	1
8–12	11	0
13–17	89	1

Torture: prohibited under all circumstances

The prohibition of torture is universally accepted, has the highest standard in human rights and humanitarian law and is subject to universal jurisdiction. This means that any state can exercise its jurisdiction regardless of where the crime took place, the nationality of the perpetrator or the nationality of the victim.⁴⁶

Article 5 of the Universal Declaration of Human Rights states: “No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.” Under international humanitarian law, Common Article 3 to the Geneva Conventions bans “violence of life and person, in particular murder of all kinds, mutilation, cruel treatment, and torture”.⁴⁷

The Syrian Arab Republic is a State Party to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment.⁴⁸

Torture against individuals of any age is prohibited, and no mitigating circumstances exist to justify its use, including in cases where torturers consider teenage victims as ‘effectively’ adult. UNICEF notes that “when the victim is a child, his or her greater vulnerability must be taken into account in determining whether the acts inflicted constitute torture or cruel, inhuman or degrading treatment, according to jurisprudence of international courts and other bodies”.⁴⁹

⁴⁶ Human Rights Watch, ‘The Legal Prohibition Against Torture’, 11 March 2013, www.hrw.org/news/2003/03/11/legal-prohibition-against-torture#laws accessed 1 October 2013

⁴⁷ Ibid.

⁴⁸ United Nations Treaty Collection, http://treaties.un.org/Pages/ViewDetails.aspx?mtdsg_no=IV-9&chapter=4&lang=en accessed 5 October 2013

⁴⁹ Dan O’Donnell and Norberto Liwski, *Child Victims of Torture and Cruel, Inhuman or Degrading Treatment*, UNICEF Innocenti Research Centre, June 2010, p vi www.unicef-irc.org/publications/pdf/iwp_2010_11.pdf

Prior “detention”, “kidnap”, “arrest” or “imprisonment” is mentioned in connection with 109 of the total of 112 torture cases, including all three girls (one of whom was aged 4, the other 15, and the age of the third was not specified). Periods of “detention” were up to seven months.

As with chemical weapons, deaths of children involving torture are horrifying but atypical of the vast majority of child deaths recorded in these databases.

The reported child torture cases warrant much closer investigation than the limited descriptions in these databases allow. A fuller understanding of the extent and nature of torture inflicted on children in Syria, and its perpetrators, will only emerge if such investigations are rigorously and impartially pursued, including by the Syrian government.



Syrian refugee girls who were injured during the violence in their country, hold their father’s mobile phone showing a picture of them before their injuries during a psychological therapy session in Amman October 11, 2012. The two girls have undergone multiple reconstructive surgeries and are two of dozens of Syrians that attend the daily therapy sessions run by French aid organization Médecins Sans Frontières (Doctors Without Borders). REUTERS

CASUALTY RECORDING IN SYRIA

There are multiple actors working within Syria, along the Syrian borders and around the world, collecting, compiling and disseminating casualty information relating to the conflict. These include Syrian and international civil society organisations, news agencies, international organisations (such as UN bodies) and the Syrian government. In addition to collecting information on conflict casualties, these actors have been documenting a wide range of human rights violations connected with the conflict.

Most of those carrying out daily and systematic casualty recording are Syrian civil society organisations working within Syria and in the border areas. Although their capacity varies, their consistent efforts and use of social media mean that casualties of the Syrian conflict may be among the most documented to date.

Working both from within and outside Syria, these organisations collect information either from their own network of volunteers and staff on the ground or from locally based activist and community groups who relay casualty information via social media as they occur. In most cases this will include the name, age and gender of adult and child victims together with details of the time, place and circumstances of their death. This information is often supplemented by documentary evidence including photos, videos and other material associated with the victim or their funeral.

Despite their open alignment with the anti-government movement, these organisations see themselves as impartial casualty recorders and seek to document all victims of the conflict. The key quality which makes their data suitable for this report is its relatively detailed nature (which in principle also makes it verifiable). None of the organisations simply issue aggregated totals; they all openly publish their raw lists from which it is possible to derive any totals and subtotals referring to, for example, children, or deaths from particular types of weapons.

The following are brief descriptions of five of these Syrian casualty recording organisations:⁵⁰

Syrian Center for Statistics and Research (CSR-SY) is an organisation based in Germany but with correspondents, academics and field researchers based in Syria. CSR-SY records casualties

and produces statistics on casualties, detainees and missing people from the conflict. The organisation started recording casualties on 19 March 2011 under a different name, Syrian Rights Association, and in August 2011 established the CSR-SY as a specialised organisation for documentation. CSR-SY makes available most of the individual-level information about casualties that it has documented on its public website. Its aim is to fact-find and monitor the conflict in Syria and in the border regions, in order to support local policy-makers and decision-makers.

Syrian Network for Human Rights (SNHR) is an organisation registered in the UK with volunteers based both inside and outside Syria. It documents a wide range of human rights violations, and began recording casualties on 18 March 2011. SNHR was reconstituted in April 2011 and has around 100 members operating in every governorate of Syria. It publishes daily aggregate reports of killings in Syria on its public website. Its individual-level records are shared with more than 50 organisations, whose names are listed on the website. SNHR aims to be an objective source of information on human rights violations in the conflict, and states that its documentation work follows international standards for such documentation.

Syria Tracker (ST) is a crowd-sourcing initiative developed by Syrian-Americans based in the United States. It has been crowd-sourcing information on casualties since April 2011. ST has partnerships with many organisations including Syrian Shuhada, with which ST has merged its data. ST relies primarily on existing networks and organisations in Syria that submit online reports to its website. It also carries out data-mining of social media and produces separate aggregate reports on deaths and other violations. ST makes all of its aggregated and disaggregated data available on its website.

Syria Shuhada (SS), or the Syrian Martyr Revolution Database, is an organisation located outside of Syria that compiles information solely on deaths (or martyrs) in Syria. It gathers this data from existing sources including information published by the Local Coordination Committees and other organisations such as VDC (see below), SNHR and ST. Its sources are listed on its public website, as is its aggregate data on deaths.

⁵⁰ The organisations listed here include four of the eight sources used in the June 2012 report on killings in Syria commissioned by the UN's Office of the High Commissioner for Human Rights (OHCHR). Despite several attempts at contact via email and phone, the UK-based Syrian Observatory on Human Rights was unresponsive to our requests to obtain its data for this study. We were informed by OHCHR that the Government of Syria has not responded to requests from the Office regarding casualty data since early 2012. In addition, two of the organisations used in the OHCHR report have stopped recording and/or merged with the organisations listed above.

Violations Documentation Center (VDC) is based primarily in Damascus, and is run by human rights lawyers and activists. VDC records casualties and also documents detainees and missing persons of the conflict. The organisation began to record casualties in April 2011. VDC's primary source is a network of volunteers/staff who are located in every governorate and most cities in Syria, who report daily on casualties in their respective districts and cities. Its individual-level records are available on its website and are searchable by an online query tool. VDC aims to uphold international standards for documenting human rights violations.

A survey of four Syrian casualty recording organisations

In order to better understand the sources providing the data used in this report, ORG surveyed four of the organisations listed above, investigating how they collect, compile, verify and publish information on casualties in Syria. The research was conducted with an online questionnaire and in-depth, semi-structured interviews, supplemented by a review of each organisation's own published material describing its projects. Below are summary descriptions of the methods adopted by these organisations, arranged by key themes within the practice of casualty recording.⁵¹

Sources and information collection

With the exception of ST, all organisations stated that their principal sources of casualty information were reports collected directly from their respective staff or volunteers located across Syria and, in the case of CSR-SY and VDC, in every governorate and district. Volunteers are either formally associated with the organisations in that role or belong to existing networks (such as student and professional networks) associated with them. Staff and volunteers collect information on deaths in their respective towns or districts from the Local Coordination Committees of Syria,⁵² field hospitals, witnesses, and families of the victims. Death tolls are reported on a daily basis for each district, along with details of individual victims. The main mode of communication between representatives working on the ground and those compiling the information is the Internet (eg, email, Skype).



Training on basic documentation organised by several civil society organisations, including the Violation and Documentation Center in the city of Qamishli, Syria. Violations Documentation Center (VDC)

All of the organisations surveyed make use of social media and information obtained from videos shared on YouTube, Facebook and the Twitter accounts of local networks or individual activists. This type of information is handled differently by each of the organisations. However, it is generally not used as a primary source but as a means for corroborating reports of deaths and details concerning individual victims and the circumstances of their deaths. All organisations also monitor local and international news media for information about incidents and deaths. Media reporting is also used to fill gaps in their data, corroborate/confirm incidents, or correct records when necessary.

ST relies mainly on reports from individuals or local networks submitting "eyewitness reports" through its website or via email. An "eyewitness report" is a report of an incident that is accompanied by either a video or a photo. As a crowd-sourcing platform ST also carries out data-mining in social media, but publishes this under a separate heading. Information mined from social media that is confirmed by an "eyewitness report" appears as "verified" on ST's website; all other information from social media appears as "unverified".

Problems connected with information collection

One of the main problems impeding the collection of information on casualties in Syria is the security situation itself. Over its first two years the conflict intensified as the armed opposition to the Syrian

⁵¹ With the exception of SS, which did not fill in the online form or participate in an interview (and whose data, as noted elsewhere, was essentially identical to ST's).

⁵² www.lccsyria.org/about For a discussion of the LCCs' contribution to reporting of the conflict, see http://www.cjr.org/behind_the_news/straight_news_from_the_citizen.php?page=all

government increased in size and acquired more arms, with the result that fighting on both sides has become fiercer. Greater use of heavy arms and explosive weapons deployed from tanks, field artillery and fixed-wing aircraft has resulted in many civilian deaths including those of journalists, activists and volunteers working for casualty recording organisations. In addition, many volunteers, as well as journalists, have faced threats from both the regime and opposition elements because of their work, with one of the organisations interviewed citing intimidation in rebel-controlled areas as a risk to staff security.

Achieving comprehensive coverage of all areas remains a key challenge for any single organisation, and not only from the dangers posed to field workers. Although all organisations claim to cover all regions and districts of Syria, VDC and ST state that obtaining information on casualties in areas now under opposition control is impeded by electricity shortages and lack of Internet connectivity. ST also noted that in some parts of Syria there is less awareness among citizens of the value of systematically reporting casualties, leading to ST receiving fewer reports and data from those areas.⁵³

Verification processes

The degree of verification attempted and the verification processes themselves show considerable variation between the organisations; however, all the organisations claim to carry out some form of verification of their data. VDC in particular, but also SNHR and CSR-SY, described systematic, multi-stage verification procedures. Staff in these organisations seek to corroborate information themselves where possible, VDC stating that this process is continuous and includes a dedicated team within the organisation responsible for monitoring other sources such as media and social media, updating information that seems to be incorrect or adding new information when it emerges.

All three organisations will use volunteers to confirm details of individual casualties with the families of victims, field hospital records and other witnesses.

ST generally requires some corroboration from additional sources, but tends to publish information



A wall of the Document it/Watheq Campaign in Douma. "Documentation is made to preserve the rights for those who have sacrificed their lives, souls and properties. Documentation is made to save their memories (The memory of Martyrs). Documentation is made to prevent any further injustice from taking place, and to stop any further killing, detention and torture." Violations Documentation Center (VDC)

without corroboration if its source is considered as "trusted", which ST defines as one that has consistently reported events and casualties accurately.⁵⁵

Problems connected with verification

As with information collection, systematic verification of information becomes increasingly difficult as the conflict intensifies. In addition, in some areas witnesses and the families of victims fear reprisal attacks and so refuse to share details of casualties.

Categorisation of data on casualties and events

The organisations surveyed reported that the information submitted to them or collected by their volunteers is entered into a central database by staff who are generally located outside Syria. Except for SNHR, all organisations interviewed use customised software dedicated to storing information about victims.⁵⁴ All organisations include a field for the victim's name, age, gender, date and location of death. VDC and ST also have a child/adult category in addition to the field for exact or approximate.

All the organisations also record the cause of death for every victim when this information is available. The cause of death is usually recorded as a short description of the incident in a comment

⁵³ ST identified Deir ez-Zor (in the east of the country) and Al Kalmilsky as areas where it felt it didn't have complete coverage in reporting.

⁵⁴ As explained elsewhere in this report, these databases have different schemas (structures), making it far from straightforward to combine their contents into a single data set.

⁵⁵ The degree of independence or interdependence of these databases and their primary sources is still not clear. Several of the organisations surveyed stated that they readily share or look at each other's databases, either formally or informally.

field. ST and VDC put the causes of death into the following categories: shelling, explosion, shooting, air strikes, detention and torture, execution.

Only VDC categorises by civilian and non-civilian. For this organisation, non-civilians are members of the Syrian army or of the opposition Free Syrian Army. CSR-SY and SNHR also mention combatant status in an informal comment field in the casualty record, under the heading "profession". Formal categorisations in line with international humanitarian law or human rights law are generally absent, except in indirect form (eg, through classification by age, or narratives describing war crimes such as torture or summary executions).

Problems connected with categorisation and the utility of current databases

Lacking in Syria (and for the most part, elsewhere) are casualty recording systems using clearly defined and compatible categories and structures. Independently administered but compatible database systems would allow efficient data sharing, verification by corroboration, and the reliable knitting together of at least some key aspects of multiple organisations' efforts. The Syrian databases already share certain conceptual features and categories; what is lacking is any form of standardisation at a technical level, which is why combining their data remains a painstaking, technically difficult and much more uncertain process than it need be.⁵⁶



A Syrian man cries while holding the body of his son, killed by the Syrian Army, near Dar El Shifa hospital in Aleppo, Syria, Wednesday, Oct. 3, 2012. Regime forces unleashed shelling on rebel-held areas and fired machine guns from aircraft, according to an Associated Press journalist in Aleppo, following three suicide car bombs earlier in the day in a government-controlled area of the city. ASSOCIATED PRESS/Manu Brabo

⁵⁶ The Every Casualty programme at Oxford Research Group is working in partnership with casualty recording organisations in its International Practitioners Network, to develop such systems, along with the standards and definitions that would underlie them. <http://ref.ec/standards>

METHODS AND RESEARCH NOTES

The databases described in the previous chapter were obtained by Oxford Research Group (ORG) either directly from the casualty recording organisations concerned or, when this was not possible, by automated downloading page by page from their respective websites, a technique known as web-scraping. The data was then cleaned up, conformed to a consistent format, and combined into a single merged data set suited to analysis.

No attempt to independently verify or corroborate the information contained in the original databases was attempted. However, such verification is possible in principle, given their high level of specificity; in most cases giving name, age and gender for each casualty, along with details of the time, place and circumstances of their death. This documentation is openly published and therefore available for closer scrutiny and investigation, case by case.

Biases within these databases may extend beyond coverage and capacity issues, which would be best tested with independent evidence of a comparable level of detail. One potential area of bias might relate to the attribution of the proximate causes of death: “caused by” might in some cases be used more loosely than to mean “directly killed” by particular weapons or conflict events. However, the patterns of harm to children revealed in this study, including the demographic breakdowns within the broad categories relating to explosive weapons and small arms, are broadly consistent with other detailed studies of recent conflict.⁵⁷ (One implication of the many reported child deaths from explosive weapons is that there should be at least as many, if not many more, children who survived their blast wounds; this presents a crucial area of follow-up to these findings that is of much more than academic interest.)

Certain internal inconsistencies within the databases could be identified and resolved (eg, reconciling a small number of cases where victims were both marked as a “child” but their age was recorded as 18 or older, or removing a few cases where the date shown for an incident was in the future). Databases containing tens or hundreds of thousands of manually filled data fields inevitably contain data-entry errors of this kind, and to the extent possible these were identified and systematically cleaned up.

By far the greatest technical set of challenges was to conform, and subsequently combine, these independently created and differently constructed

databases. A key problem was that while death records are almost always accompanied by a narrative describing the circumstances of death, from which required information such as the cause of death (ie, type of weapon) could be extracted, such narratives are not in themselves amenable to statistical queries. This means that the most common narrative descriptions, covering the majority of deaths, had to be condensed into overarching cause-of-death ‘super-categories’ such as “Shooting” or “Explosive weapons”, while retaining for analysis some of their more significant, or more commonly reported, subcategories, eg, “Sniper fire” or “Artillery”.

None of the four databases incorporates all the records contained in all the others; each is missing some deaths, or details, covered by one or more of the others. There is also considerable overlap between them (which is unsurprising, given that all nominally cover the entire conflict and that many of these conflict events are widely documented). For the most comprehensive coverage it was necessary to combine the databases while ensuring to the extent possible that any individual victim recorded in multiple databases appears only once in our merged data set. This is particularly challenging when there are different ways of recording the same person – ie, database authors using different Arabic and Syrian naming conventions that include (or exclude) common name prefixes, or when data collectors may have rather inexact knowledge about individual victims (eg, their precise age).

Consequently, exact name matches alone were not used to identify possible matches and non-matches across the lists. Details such as discrepancies of more than 32 days in the dates of deaths and location (at the governorate level) for any given name (or variants thereof) were taken into account in the assumptions used for matching individuals when merging databases.

Each of the original databases contained a small proportion of individuals listed as unidentified or with a blank name field, as well as a number of internal duplicates. As the merge process could not reliably distinguish the unidentified from each other or from the named dead across multiple databases, they were excluded from the merge and its resultant data set. However, it should be understood that this is an inherent limitation of the methods employed, and does not necessarily indicate that these unidentified individuals represent duplicated information.

⁵⁷ For example, ‘The Weapons That Kill Civilians — Deaths of Children and Noncombatants in Iraq, 2003–2008’, *New England Journal of Medicine*, April 2009, 360:1585-1588. www.nejm.org/doi/full/10.1056/NEJMp0807240

It should also be noted that while it is possible to take steps against inadvertent duplication, as we have attempted throughout, there are many more scenarios under which a given name could appear more than once and be missed by an automated system, than for two people with the same name to be listed and one of them mistakenly removed. This is a reality for any database merge.

Certain critical, but relatively small-number findings (on children reported killed by chemical weapons, or those tortured and killed) where minor errors would be significant were assisted by the merge process, but ultimately extracted 'manually' from the multiple original databases by a human reader/analyst.

Analyses were confined to data that was relatively abundant, ie, to variables that had good-to-excellent coverage, ranging from 69% (for precise child age), to 93% (for cause of death), to 100% (for gender); findings in the present report are consistently presented in the context of this coverage.

Although all organisations aim to record age, exact age is only known for some 17–30% of the records for each data set, although whether the individual was a child was recorded about 22%–24% for three databases, and in almost all cases for VDC. Analysis of the data showed several age 'spikes,' at age 10, 20, 30, which leads us to believe that witnesses or those submitting reports tend to approximate the age of casualties. The child age ranges in this study (0–2, 3–7, 8–12, 13–17) were chosen in part to accommodate peaks around 5, 10 and 15.

While overall age coverage was not complete (71% of all named records in the merged data set, which includes roughly 10% that are recorded as children), we consider it unlikely that age coverage for children follows the same pattern as for adults. The principle reason is that a child's violent death is emotionally and socially of particularly heavy significance in all cultures, including the culture we share with Syrians. Given that the casualty recorders were sufficiently informed to know the names of all of the dead under consideration, as well as their gender and where and when they died, and in 93% of cases how they died, it is highly unlikely that they would consistently miss, or fail to be informed or to note when these victims were children. Such a simple fact is of a different order of significance and availability for casualty recorders than whether, for example, a given adult was 25 or 35 years old.

A possibly significant exception is deaths in areas loyal to the Government of Syria, where the casualty recorders who provided the information in this study have only nominal access owing to their own pro-rebel affiliations. This may partly explain why in at least two such governorates, Latakia and Tartus, the proportion of reported child deaths is much smaller than for the country as a whole (approximately 2–2.5% vs 8–14%; note that the total number of deaths in these governorates is also comparatively small). At least one major independent report⁵⁸ lists a number of killings, including summary executions, of children by rebel forces in Latakia in August 2013 that were undocumented in these databases when accessed.

However, this difference might also reflect other underlying realities with a more direct impact on actual, as well as reported, child deaths. For instance, both adult and child deaths in these governorates were much less often caused by explosive weapons, the primary cause of death among children. In Aleppo, for example, explosives were used heavily enough to account for 41% of all deaths (adults and children included), whereas in Latakia they accounted for 12%.

We therefore expect that (with exceptions as noted above) the merged data set is almost complete in indicating child status for the victims it includes.

We conclude that the number of deaths for children (11,420) and for all age groups (113,735) in this report approaches the limits of what can be achieved with victim-level information alone. Significant further integration, including the inclusion of unidentified victims, would require a breakdown of the original data at the incident level – that is, breaking it down (where feasible) into specifiable incidents with which victims are associated. It would also be advantageous to solve more of the merge-related issues via human rather than machine analysis (time and resources permitting).

It cannot be stated with certainty at this time whether these numbers should be considered too low or, owing to deficiencies in the original data or our merge process, too high. They should certainly not be taken as exact, definitive, or without scope for improvement. And a full and complete picture of the Syrian conflict's casualties might well take months or years of post-conflict, on-the-ground investigatory work. In the meantime, the work of those recording its casualties under imperfect conditions and by limited means should be supported and the best possible value derived from it, as we have attempted to do here.

⁵⁸ Human Rights Watch, You Can Still See Their Blood, Human Rights Watch, 2013, http://www.hrw.org/sites/default/files/reports/syria1013_ForUpload.pdf accessed on 6 November 2013

RECOMMENDATIONS

The conflict in Syria has had a catastrophic effect on the country's children. Besides the many whose lives and futures have been stolen from them, many more will have been injured, maimed, psychologically impacted, uprooted from their homes and orphaned.

Detailed and accurate knowledge of the full human consequences of a conflict is essential in order to identify effective humanitarian responses, including providing for the needs of survivors. A proper record of casualties is a fundamental element of this knowledge.

In recognition of this, all parties with a concern for the victims of the Syrian conflict should strive to do the following:

- Work together to ensure that the most complete and detailed record possible of every casualty is achieved, as soon as is practicable, and that this informs their responses.
- Provide material, technical and financial assistance to members of the civil society organisations that are engaged in this work.
- Pay greater attention to, and make more use of, the information that casualty recorders have already produced.
- States, in particular, should give greater recognition and support to casualty recording efforts both within Syria and in other conflicts, including by raising and promoting the casualty recording agenda in relevant international forums.

Specific recommendations for all parties to conflict:

- Refrain from targeting civilians and civilian objects such as schools, hospitals and places of worship. The principles of distinction and proportionality must be strictly applied and the unlawful killing of civilians, including children, must end.
- Provide better training on international humanitarian law and operational targeting to armed forces and groups. Training must focus on actions that armed forces and groups can take to ensure they are not putting civilians and children at risk.
- Honour the obligations under the Optional Protocol to the Convention on the Rights of the Child, 2000, and within the Geneva Conventions relating to the special protection of children and the commitment not to recruit persons under 18 years of age.
- Ensure that armed forces and groups are taking the necessary steps to protect civilians, by training them in recording casualties caused by their forces and in tracking other forms of civilian harm.
- Make public, as soon as possible, any casualty records produced by armed forces and groups, the sole condition for delay being the need to avoid endangering life. This will contribute to a fuller picture of the impacts of a conflict that can inform efforts to minimise harm to civilians.
- Promote access and protect journalists, citizen journalists and others contributing to the recording of casualties.

Non-military options for ending the Syrian conflict

*Is military intervention the way to protect children and civilians in Syria? There are better alternatives, argues **Richard Reeve**, Director of ORG's Sustainable Security programme⁵⁹*

Acting in the name of civilian protection is not necessarily the same as protecting civilians. Military interventions by the USA, UK and others this century have repeatedly demonstrated the difficulty of predicting the consequences and outcomes of the application of force abroad. The initial optimism over lives saved through 'liberal' military intervention in Kosovo and Sierra Leone was rapidly lost in the mountains of Afghanistan and cities of Iraq. The debate continues over the impact of NATO air strikes on Libya.

Military action is inherently dangerous to those targeted. To think that military planners can exclude civilians from targets is a fallacy. Weapons may be smarter now than ever before but military and leadership assets are often deliberately sited in urban and residential areas. Even in the most rural areas, data suggests that US drone attacks in Afghanistan and Pakistan still kill many civilians. Such 'collateral' casualties also inspire retaliation and radicalisation in cycles of violence.

Applying sufficient force to dislodge one regime or armed group does not equate with providing a government that has the determination, resources and legitimacy to protect and serve its own people. Often it means trading one form of marginalisation for another. In a situation of extreme social divisions, such as those that protracted periods of authoritarianism or violence tend to produce, removing the dominant force may intensify the violence between remaining factions. This was the case in Somalia and may be the case in Syria, where ideological, personal and strategic divisions between opposition factions have grown as the civil war has intensified.

The best alternative in Syria is to put serious pressure on the various combatant parties and their foreign sponsors to commit themselves to ceasefire and a negotiated political settlement. Convergence of US and Russian positions on dismantling Syria's chemical weapons capabilities was an important step in this direction. Further

impetus has been added through the P5's shared concern about the rapid consolidation of radical Jihadist factions among the armed opposition, the British parliament's veto on UK military action, and the reluctance of US executive and legislature to create a new foreign military entanglement.

While the responsibility for negotiating a sustainable peace rests overwhelmingly with Syrian actors, including unarmed parties, the role and support of international sponsors of the violence cannot be overlooked if the mooted Geneva II process is to succeed. The Iranian opening to the West following the election of President Hassan Rouhani may be beneficial in this regard, but only if Iranian representatives are given a stake in the Syrian peace process. Concerned about the potential for US–Iranian rapprochement to undermine its own regional status, Saudi Arabia must also be persuaded to engage constructively with peace negotiations. Curtailing supplies of arms and funds from regional states to pro- and anti-regime factions is a crucial condition for such a settlement to succeed.

Judicial mechanisms should not be overlooked, both in restraining the behaviour of combatant parties, and in pursuing post-conflict justice. War crimes prosecutions through the International Criminal Court (ICC) are possible. Although Syria has not signed the Rome Statute, international prosecutions could be brought if the UN Security Council refers Syria formally to the ICC. Due legal process and systematic gathering of evidence, including data on casualties, is crucial in this regard.

The UN has been investigating a wide range of alleged crimes committed by both sides, with a view to future prosecutions. The presence on the Security Council of a majority of non-signatories to the Rome Statute presents obstacles to referral. Yet the Council has overcome such obstacles before, notably in regard to alleged Sudanese war crimes in Darfur. Growing P5 consensus on the need for conflict settlement could make this possible in the case of Syria too. As with military intervention, at least the threat of prosecutions could increase pressure on the combatants to curb the most egregious atrocities and negotiate peace.

⁵⁹ Oxford Research Group's Sustainable Security programme works to identify and promote resolution of the causes of current and future insecurity, not just its symptoms. <http://sustainablesecurity.org>

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