

# A DEVASTATING TOLL

The impact of three years of war  
on the health of Syria's children



**Save the Children**

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We save children's lives. We fight for their rights.  
We help them fulfil their potential.

All names of health workers, children and parents  
have been changed to protect identities.

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Cover photo: A boy is treated in a hospital in Syria after being wounded by  
shrapnel. (Photo: Rex Features)

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# EXECUTIVE SUMMARY

“We received a little girl with critical injuries; we could do nothing but wait for her to die because we didn’t have the equipment or the medicines. Till now I can’t remove her face from my mind.”

Anas,\* health worker

Syria’s three year civil war has had a devastating impact on children. At least 1.2 million children have fled the conflict, and become refugees in neighbouring countries, while another 4.3 million children in Syria are in need of humanitarian assistance.<sup>1</sup> Children have witnessed and experienced extreme violence, and more than 10,000 young lives have been lost as a direct result.<sup>2</sup>

These horrifying facts are recognised worldwide. But this report for the first time tells another, less obvious, story of the forgotten casualties of war.

It is not just the bullets and the shells that are killing and maiming children. They are also dying from the lack of basic medical care. Syria’s health system has been devastated. As a result, increasing numbers of children are suffering and dying from diseases that would previously either have been treated or prevented from taking hold in the first place.

Since the outbreak of war three years ago, it is probable that several thousands of children have already died as a result of greatly reduced access to treatment for life-threatening chronic diseases like cancer, epilepsy, asthma, diabetes, hypertension and kidney failure.

This is more than a crisis. It is the threatened collapse of an entire health system, which endangers the lives and well-being of millions of children.

Until the conflict started, Syria was a middle-income country, with child survival statistics to match. In 2012, the child mortality rate was 15 per 1,000 births, down from 38 in 1990, and Syria was broadly

on track to reach Millennium Development Goal 4 – to reduce the child mortality rate from preventable diseases by two-thirds.<sup>3</sup> These gains had been achieved because the country had a functioning health system that provided reasonably consistent standards of care, including high vaccination coverage rates for children, and universal coverage of skilled birth attendance and institutional delivery.<sup>4</sup>

Three years on from the start of the conflict, the story could not be more different: a shattered health system resulting in brutal medical practices that have left millions of children suffering.

This report looks at the devastation of the health system in Syria and what this means for children and their mothers. It outlines the lack of skilled medical staff and access to child-focused care, equipment and medicine; the impact of the breakdown in the healthcare system on maternal and newborn health; and the rise of vaccine-preventable and infectious diseases in children. In short, Syria’s humanitarian crisis has become a devastating health crisis.

Across Syria, 60% of hospitals<sup>5</sup> and 38% of primary health facilities<sup>6</sup> have been damaged or destroyed, and production of drugs has fallen by 70%.<sup>7</sup> Nearly half of Syria’s doctors have fled the country: in Aleppo, a city which should have 2,500 doctors, only 36 remain.<sup>8</sup>

The few remaining facilities struggle to cope with the large number of patients who need treatment. Health workers, medical staff and patients, including children, have come under attack either en route to or inside medical facilities themselves. Homes are being used as makeshift hospitals, even turning living rooms into operating theatres.

The majority of children arriving at health facilities come with crisis-related injuries – but the clinics no longer have the personnel, equipment or sanitary conditions in which to treat them.

\* All names of health workers, children and parents we spoke to have been changed to protect identities.

The extent of the decline in Syria's health system is demonstrated in many horrific ways, including:

- children having limbs amputated because the clinics they present to don't have necessary equipment to treat them
- newborn babies dying in their incubators due to power cuts
- in some cases, patients opting to be knocked out with metal bars for lack of anaesthesia
- parents arriving at hospital to find no medical staff and hooking up children themselves to intravenous drips.

In Syria today, children's lives are on the line before they are even born. Women in Syria face huge difficulties in accessing antenatal, delivery and postnatal care, including a lack of ambulances, few female hospital staff, and frequent checkpoints and roadblocks encountered on the way to hospitals. These problems have led to a large increase in the number of unassisted births, as well as a shift in the proportion of women opting for planned caesarean sections, despite the unsanitary conditions, for fear of giving birth at home, alone or while fleeing fighting.

Vaccine programmes in Syria have collapsed, with a peacetime coverage rate of 91% falling to 68% just a year after the conflict began; this rate is likely to be far lower today.<sup>9</sup> Deadly diseases like measles and meningitis, practically unheard of in the years before the conflict, are on the rise. Even polio, which was eradicated across Syria in 1995, is now being carried by up to 90,000 people\* across the country<sup>10</sup> – a figure so high that medical experts have raised concerns about a potential international spread of the virus.

Beginning to rebuild Syria's collapsed health system will not be easy as long as the conflict continues, but there are a few actions that, if taken urgently, could significantly improve the lives of children suffering in this conflict:

1. United Nations Security Council resolution 2139 on humanitarian access must be implemented immediately, to provide vaccines, food, water, medicines and other life-saving assistance. Humanitarian organisations must have freedom of access in all areas. Aid must be allowed to cross conflict lines, enter besieged areas, through humanitarian pauses if necessary, and cross borders where this is the most direct route.
2. Health facilities and health workers must not be targeted and they must be allowed to treat children in need.
3. Immediate investment in, and access to, child-focused health services is needed to ensure that children are not dying from preventable and treatable injuries and illnesses. Of the remaining public hospitals, only half are equipped to manage childhood diseases, and many facilities lack the proper equipment and medicine for children with severe injuries or chronic diseases.

The international community is failing Syria's children, even as they are injured and wounded and are unable to access treatment, as they contract polio and other preventable diseases that kill and disfigure them, and as they suffer and die from not being able to get the right medicine. World leaders must stand up for the smallest victims of this conflict and send a clear message that their suffering and deaths will no longer be tolerated.

\* The figure of 90,000 has been corrected from the previous version of this report.



**Zaria\*** at her home in a refugee camp in Lebanon, near the Syrian border.

# INTRODUCTION

The humanitarian situation in Syria and the region worsens every day. The scale, brutality and duration of the conflict have created levels of need almost impossible to imagine, and have stretched limited resources to their breaking point. As the civil war intensifies, children are among the worst affected. Inside Syria more than half of the 6.5 million people displaced are children, and some 4.3 million children are in desperate need of food, shelter, medicine and psychosocial support.<sup>11</sup>

Save the Children has a long history of working in the Middle East, responding to both humanitarian crises and long-term development needs. We have been working with children affected by the conflict in Syria since 2012. Despite operating in an extremely complex and difficult environment, we have reached more than 500,000 people inside the country with essential and life-saving aid, including food, clean water, healthcare and shelter. We are working to protect children from harm and to help them stay in or restart school. Save the Children is also providing support to refugees and host communities in Jordan, Lebanon, Egypt and Iraq.

Previous Save the Children reports have highlighted the atrocities children have witnessed, the impact of war on all areas of childhood and the hunger crisis Syria is facing. This report is different in that it examines the calamitous disintegration of Syria's health system and what this means for children and their mothers. Syria's humanitarian crisis has become a health crisis – and risks becoming a child-survival crisis. This report brings to light the lack of skilled medical staff and access to child-focused care, equipment and medicine; the impact of the breakdown in the healthcare system on maternal and

newborn health; and the rise of vaccine-preventable and infectious diseases in children. The report concludes that much of the previous progress made in child health and child survival has been reversed and that immediate and unfettered humanitarian access, particularly for essential healthcare, is needed in order to halt the suffering and death of Syria's children.

Our findings are based on primary and secondary health data from inside Syria, and Save the Children's experience in responding to the crisis. Our research also involved conducting interviews with children and their parents.

In collecting evidence on the healthcare situation in Syria, many have put their lives at risk. However, we must acknowledge the limitations of this research. Gathering data in a war zone is hazardous, and many districts are inaccessible, and disease surveillance systems are still being developed. More than 3 million people are estimated to be living in hard-to-reach areas, including 242,000 trapped in besieged parts of Syria.<sup>12</sup> It is therefore likely that the health situation in the country is far worse than is presented in this report. Information on some of the key health issues affecting children is not being consistently tracked, such as overall numbers affected – especially with regard to trauma cases – or the causes of and rates of child mortality. Although there are gaps, the available information in this report depicts the grave situation faced by large numbers of Syrian children and their families.

We know that children are needlessly suffering and dying from preventable and treatable diseases. We know that those with chronic illnesses are not getting the treatment they need, and that – due to insufficient antenatal care – children's lives are under threat before they are even born.

# I THE DESTRUCTION OF A HEALTH SYSTEM

“As a doctor from Syria it breaks my heart to see the state of Syria’s health system.”

Dr Ahmad\*

Before the conflict, Syria’s health services were generally well regarded in the region. Its universities were known to produce good doctors and its factories met over 90% of the country’s drug needs and exported to 50 other countries. Patients could expect reasonable care, and Syrians had a life expectancy of 76 years.<sup>13</sup>

Three years of conflict have set Syria’s health system back decades. 60% of hospitals<sup>14</sup> and 38% of primary health facilities<sup>15</sup> have been damaged or destroyed, and drug production has fallen by 70%.<sup>16</sup> The few remaining facilities struggle to cope with the large numbers of patients who need treatment. Medical facilities – whose civilian and protected status was once sacrosanct – are now in the firing line. Health workers, medical staff and patients, including children, have come under attack either en route to or even inside medical facilities.<sup>17</sup> Doctors and health workers are resorting to using homes as makeshift hospitals, even turning living rooms into operating theatres.

Many health workers and medical staff have been killed or imprisoned, or have fled the country. They are dying in the line of duty: Mohammad,\* a polio campaign supervisor, was killed on 30 January 2014 while en route to immunise children in a door-to-door

programme.<sup>18</sup> The World Health Organization estimates that nearly half of Syria’s doctors have fled the country. In Aleppo, of the 5,000 doctors at the start of the conflict, only 36 remain – for an estimated 2.5 million people in need.<sup>19</sup> This is catastrophically far below the World Health Organization minimum standard of 2,500 doctors for a population of that size.<sup>20</sup>

The exodus of professionals leaves junior and inexperienced staff to perform complex operations. A recent assessment of 45 functioning public hospitals showed that just 0.3% of remaining health staff are qualified emergency doctors.<sup>21</sup> One 26-year-old general practitioner, Tahsen,\* told us he has already performed hundreds of surgical procedures and treated all kinds of fractures, despite not having a medical specialisation in this area and having graduated from medical school only a year ago. Tahsen works in a makeshift hospital set up in the basement of a house with a skeleton crew of four doctors.<sup>22</sup> In one study a group of children complained that there was only one practitioner available, and he was a dentist.<sup>23</sup>

“I feel so desperate and useless when I can’t help sick or injured people because I don’t have the medicine or the equipment, but I go on working and I will continue, whatever the conditions.”

Tahsen,\* general practitioner

\* All names of health workers, children and parents we spoke to have been changed to protect identities.



## 2 OPERATING UNDER FIRE

An estimated 575,000 people had been wounded in the conflict in Syria as of September 2013, with many injuries resulting in long-term disabilities.<sup>24</sup> The majority of children arriving at health facilities come with conflict-related injuries – severe burns, deep wounds and open fractures caused by shelling and fragments of bullets in their bodies. In one hospital where Save the Children works, 24% of admissions were for children under 14.<sup>25</sup>

Operating in this environment is horrific. A doctor who is working out of a basement in a house told us: “Every day we have injured children suffering from critical burns and fractures – they need to have complicated operations but in this small hospital we don’t have the capacity. In some cases we have to cut their limbs off to try to save their lives – because if we don’t they will bleed to death.”

Many of Syria’s children are now permanently disfigured by amputation. Extensive bleeding, and lack of equipment to stem this, means doctors are having

to amputate to save their patients’ lives. According to a recent report by Handicap International, interviews with 913 people suffering from conflict-related injuries revealed that 60% of these had been caused by explosive weapons; nearly 20% of these injured individuals were infants and children; and 25% of the victims in this study had undergone amputation, nearly double the number in other conflicts.<sup>26</sup> The National Syria Project for prosthetic limbs, based in Turkey, reports that 40% of the 370 people they treated last year were women and children.<sup>27</sup>

Syria’s health system is now in such disarray that we have heard reports of doctors using old clothes for bandages and patients opting to be knocked unconscious with metal bars, because there are no anaesthetics. The lack of clean water means sterilisation for bandages is nearly impossible, causing the threat of infection and possible death.

“Simple wounds can get worse because of using unsterilised equipment and a simple thing like using an unsterilised bandage can lead to death.”

Dr Ahmad\*

When Shadi’s\* village was shelled he was hit by shrapnel. The medical staff at the temporary clinic in his village managed to save his life with first aid, but he still has a piece of metal wedged in his body. The shrapnel remains in his spine, and presses on a nerve which has caused partial paralysis, making Shadi unable to walk. Shadi, 16 years old, now has to use a wheelchair (right) and cannot go to school. He needs help from his family to do everything – go to the toilet, get dressed, brush his teeth. The doctors told his parents that they didn’t have the means available to remove the piece of shrapnel stuck in his body, but that they thought he would be able to walk if the shrapnel was removed.

*“Thank God for everything that happened to me, even if it was bad. Everyone has a lot of wishes in life, like money, cars and houses. My only wish is to be able to walk. I have hope, and I never want that hope to die, as that hope is mine.”*

Shadi\*



# 3 FORGOTTEN CASUALTIES

The forgotten casualties of Syria's conflict are those children, like Omar (see box below), who are affected by chronic diseases, such as cancer, epilepsy, asthma, diabetes, hypertension and kidney failure.<sup>28</sup> The Syrian American Medical Society estimates that since the start of the conflict 200,000 Syrians have died from chronic illnesses due to lack of access to treatment and drugs.<sup>29</sup> On the basis of pre-conflict data, it is probable that several thousands of children have already died as a result of greatly reduced access to treatment for life-threatening chronic diseases.<sup>30</sup>

Many of those manageable conditions are now painful and fatal because patients are no longer able to buy pain medication from pharmacies or to access regular medical treatment. The Syrian Organisation for Medical Aid estimates that 5,000 dialysis patients and 70,000 cancer patients are not receiving the treatment they need. This includes children with leukaemia whose treatment has been interrupted, resulting inevitably in death.<sup>31</sup>

Omar\* was 11 years old when he was diagnosed with cancer before the conflict. He began to receive treatment in a cancer hospital and continued his treatment throughout the first year of the conflict. Later, the fighting and road blocks meant it became impossible to access treatment. He developed a tumour which blocked his blood supply, and his left leg had to be amputated twice, once from below and once from above the knee.

Omar's health continued to deteriorate and his family tried desperately to get him to a hospital in a neighbouring country. After a treacherous journey, Omar's father eventually crossed the border carrying his son on his shoulders. Because of numerous delays in receiving the right treatment on time, Omar died, aged 14.

"I met a father looking for drugs for his son who had leukaemia. I tried to secure these drugs for him but I couldn't. These drugs are so expensive. The child was about two years old and his physical situation was so bad – he couldn't speak or walk. It was so sad that I could not help him. His father told me that he had been everywhere in Syria but he could not find the drugs as they were only ever available at the main hospitals, and most in this area have been destroyed."

Dr Ahmad\*

A paediatric doctor we spoke to said a large number of children in his hospital were suffering from thalassaemia, a type of anaemia. In one sub-district of Aleppo, 750 cases of thalassaemia were reported in children, three of whom had died from the condition.<sup>32</sup> Some of these patients need blood transfusions at least once or twice a week. In this part of Syria there are no hospitals with blood transfusion units, and without transfusion some of these children may die. Hospitals do not have refrigeration to store blood, and they do not have the testing materials to determine blood type. As a result, some patients have died from receiving the wrong blood type.<sup>33</sup> In other areas of Syria, blood banks have been destroyed<sup>34</sup> and it has been reported that, in some cases, blood transfusions are being performed directly from person to person because there is no power. In most of these cases the blood is not screened, because testing kits are not available, making these transfusions an extremely dangerous practice. One recent initiative is attempting to set up a blood transfusion service with screening, but vital machinery is missing, which means it cannot run at full capacity.<sup>35</sup>

Despite the difficulties, doctors are making heroic efforts and devising innovative ways to help children suffering from chronic diseases. One doctor said that his organisation is using car batteries to power home-made dialysis machines. Children may require dialysis five to seven days a week for up to six hours at a time; this more portable solution enables patients to be moved to a safer place when there is a security risk while undergoing treatment.

# 4 WOMEN AND CHILDREN LAST

“We witnessed a woman giving birth on the doorstep of a hospital. When the building was hit, my colleague was providing care and he was trying to deliver the baby. At the first hit the hospital had to be evacuated as they knew there would be a second hit. They carried the woman outside and they delivered the baby just outside the main door of the hospital. They managed to get away but the hospital was flattened. They survived, but giving birth at the door of a hospital under such stress is indescribable.”

Dr Faris\*

## GIVING BIRTH IN SYRIA

Before the conflict, in 2010, 96% of mothers in Syria had medical assistance when giving birth. The situation now is very different.<sup>36</sup> A recent needs assessment of 121 sub-districts in Syria showed that less than a quarter had regular access to

reproductive services. In some besieged areas, such as parts of Homs, a recent assessment showed there are no reproductive services at all.<sup>37</sup>

Women in Syria face huge difficulties in accessing antenatal, delivery and postnatal care, including lack of ambulances, few female hospital staff and frequent checkpoints and roadblocks encountered on the way to hospitals. These problems have led to a large increase in the number of unassisted births,<sup>38</sup> as well as a shift in the proportion of women opting for planned caesarian sections. In 2011, 19% of mothers in Syria delivered via caesarian section. By 2013, this had more than doubled to 45%.<sup>39</sup> A hospital in a besieged city reported delivering 75% of all babies via caesarian section.<sup>40</sup> Women are often choosing to deliver by caesarian so they can time the delivery of their baby, rather than risk being in labour in an insecure context, with no ambulance, and especially risking a terrifying journey at night.

“There are no ambulances... if someone is injured after sunset, they will die for sure.”<sup>41</sup>

Community outreach worker

A doctor uses a mobile phone to provide light during an operation on a baby.



PHOTO: SAM TURLING/SAVE THE CHILDREN

Caesarean is by no means a woman's first choice, but many see no other option. Because a caesarean section entails major abdominal surgery, risks for the mother include infections; complications from anaesthesia; and haemorrhage, blood loss and dangerous clots. Consequently, women require a longer recovery time. For the baby, the procedure is linked to increases in premature births, breathing problems, and generally lower health scores, related to babies being deprived of the stimulation they normally experience as they travel through the birth canal.<sup>42</sup>

Unassisted births present huge health risks to both mother and baby, as Samira's story shows:

"My husband was killed during the fighting and I had to leave my village with my four children. I was five months pregnant and it took me two months to get to this shelter. Throughout my entire journey my children and I were bitterly cold and hungry.

"When I arrived I went into early labour in my seventh month. There was no hospital or medical staff nearby so the other women helped me.

"My baby was born so prematurely and there was no special care to help him survive. He lived just two hours."

Samira,\* aged 28

A doctor described to us what it is to give birth now in Syria:

"Before the conflict started it was common for normal deliveries to be done by midwives in people's homes, in their villages. These midwives had been trained by the Ministry of Health. If it was a normal delivery the birth was at home, otherwise the mother would be referred to a hospital. Globally, 15% of pregnancies will be complicated and require referral to specialist care, making it crucial for women to have skilled birth attendance.

"Now in some areas there are no midwives and the nearest one may be 20–30 minutes away. The woman in labour has to be transported to the midwife and sometimes the only transportation available is a motorbike. This is extremely difficult and uncomfortable for the woman in labour and adds additional stress due to the unpredictability of travelling in an insecure environment to deliver her baby.

"Most times even midwives do not have the medicines or equipment they need for simple deliveries – for example, a gynaecological table or a vacuum for extractions, the preferred alternative to forceps to assist in deliveries. There



PHOTO: JONATHAN HYAMS/SAVE THE CHILDREN

**Baby Nasib\* and his brother at a Save the Children-supported health clinic near the Syrian border in Lebanon.**

are many cases of women giving birth unassisted, or of health workers being forced to assist women despite having no experience in doing deliveries.

“For complications, the nearest hospital, if it is functioning, is often 50–60km away. There are no ambulances, roads are insecure, and even if they reach the hospital there is little equipment and few skilled staff.”

## SURVIVING AND THRIVING IN THE FIRST HOURS OF LIFE

In Syria many newborns’ lives are under threat as soon as they are born. Less than half of the remaining functioning public hospitals are equipped to manage childhood illnesses or have the necessary equipment and specialist staff to treat newborn babies.<sup>43</sup>

Frequent power cuts mean that premature babies are dying in their incubators – in one area, five newborns died this way in one day.<sup>44</sup> Newborn babies have to be kept warm for at least four to six hours, and the lack of electricity and heating results in some children dying of cold. The unpredictability of power, cold winter months and the lack of incubators mean some hospitals wrap up babies in blankets. But in one health facility two babies died because it was too cold and the blankets did not keep them warm enough.<sup>45</sup>

Those who do survive are not getting the best chances of a healthy start in life that exclusive breastfeeding would provide. Breastfeeding offers important protection for newborns, providing them with the antibodies they need to fight disease, and valuable

nutrients that infant formula does not contain. Globally, 22% of newborn deaths could be prevented if babies were breastfed in the first hour of life,<sup>46</sup> receiving colostrum or first milk from their mother – the most potent immune-booster known to science.<sup>47</sup>

In Syria, breastfeeding was not widespread prior to the conflict with only 43% of children under six months exclusively breastfed.<sup>48</sup> Breast-milk substitutes were widely used, with the government of Syria controlling the production and distribution of infant formula through pharmacies. Now, the conflict has broken this supply network.<sup>49</sup> At the same time, with the deteriorating situation, even fewer mothers are breastfeeding and the feeding practices seem to be worsening.<sup>50</sup>

In all situations, children who are fed infant formula are more likely to become ill and die than those who are breastfed. In an emergency context such as the Syrian conflict, where the risk of dying is already particularly high for children, breastfeeding saves lives, providing critical protection from infections and death.<sup>51</sup>

A recent needs assessment from Dara’a showed that rather than breastfeeding, people were using water and sugar for infant feeding.<sup>52</sup> Myths and misconceptions have proliferated about women’s ability to breastfeed in a crisis, with one woman simply saying “when you run away the milk runs away”.<sup>53</sup> In such circumstances it is critical that mothers receive support to start breastfeeding again. In a number of previous conflict situations, Save the Children has witnessed that this is possible with the work of re-lactation counsellors.

# 5 REVERSING PROGRESS

“I feel like I did nothing to help him, even though I tried all the possible ways to get him the medicine. How do I feel? I feel like my lovely child can’t grow up and play like other children.”

Father of Bsher, a three-year-old child with meningitis and partial paralysis

The conflict is impacting the progress Syria had made in reducing deaths of children under the age of five. In 2012, the child mortality rate was 15 per 1,000 births, down from 38 in 1990.<sup>54</sup> Before the conflict, 15% of under-five deaths were caused by pneumonia and diarrhoea.<sup>55</sup> Now, new reporting inside Syria consistently shows more children contracting diseases that are preventable. For instance, reports from seven out of 14 governorates in Syria at the beginning of 2014 showed that 25% of reported illnesses for under-fives were acute respiratory illnesses, including pneumonia; 25% were acute jaundice syndrome (linked to hepatitis); 17% were vaccine-preventable measles; and 8% were

acute bloody diarrhoea.<sup>56</sup> Diarrhoea, measles and pneumonia are some of the biggest killers of children under five worldwide.

Squalid and overcrowded living conditions, poor water and sanitation, together with frequent movement of communities and heavy smog caused by the fighting has led to an increase in skin diseases in children, and to Leishmaniasis, a parasitic disease that affects several internal organs, and that can cause horrific ulcers and permanent disfigurement. Before the conflict there were fewer than 3,000 cases of Leishmaniasis; there are now more than 100,000.<sup>57</sup> Leishmaniasis is caused by the bite of the sandfly and is endemic to the Middle East. Accumulation of garbage in the streets and the breakdown in water supplies and sanitation have led to the breeding of these insects. Leishmaniasis has become a particular problem in pockets of Syria, especially among displaced people in Aleppo. In addition, several cases of visceral Leishmaniasis, a fatal disease if left untreated, are now being reported.<sup>58</sup>



PHOTO: SAM TARLING/SAVE THE CHILDREN

A boy surveys the almost-empty shelves of his father's pharmacy in Syria.

# 6 VACCINE-PREVENTABLE ILLNESSES

The World Health Organization reported a decline in vaccination coverage rates in Syria, from 91% in 2010 to 68% in 2012, and this figure is now likely to be much lower.<sup>59</sup> An assessment conducted in the first quarter of 2013 among displaced people and communities found that a functioning immunisation programme had not been in place for two years.<sup>60</sup> Syria's children have not had access to the standard immunisations offered to children worldwide.

In the first week of 2014 alone, 84 measles cases were reported in children under five in just seven governorates of Syria.<sup>61</sup> This compares starkly with the 26 measles cases recorded in the whole of Syria for all ages for the entire year in 2010.<sup>62</sup> Measles is a highly contagious and dangerous disease, and without treatment it can lead to pneumonia, diarrhoea,

conjunctivitis, blindness and death. In humanitarian emergencies, as many as 20–30% of children who contract measles have been known to die.<sup>63</sup> It is most likely to be severe in poorly nourished young children or in those whose immune systems have been weakened by stress and other diseases.<sup>64</sup>

Suspected meningitis, similarly a vaccine-preventable disease, is also on the increase. In the first two weeks of January 2014, there were 30 cases recorded in children under five years old in seven Syrian governorates, based on signs and symptoms,<sup>65</sup> more than double the number recorded at the same time in 2010.<sup>66</sup> Meningitis is an extremely dangerous disease that should always be treated as a medical emergency. Even if healthcare is accessed early on, the disease has a 5–10% fatality rate. Untreated, it can kill up to 50% of patients, while leaving others with hearing loss, learning disability or severe brain damage.<sup>67</sup>

Bsher\* is three years old. Before the conflict every child in Syria received a course of vaccinations by the age of two, but since Bsher and his family were forced to leave their home because of the conflict, it has not been possible for Bsher to complete his course of immunisations. Six months ago he contracted meningitis. His parents searched everywhere for medicine, but couldn't find any. The meningitis led to paralysis of his right hand and foot. He can no longer play with his friends and needs help to do even the most basic of things.

Bsher simply said: *"I wish I could play football with the other children."*

For 18 months, Bsher and his family have been living in a tent in a temporary shelter. Their shelter, like those of other families around them, consists of plastic sheeting. In the summer they suffer from the searing heat and in the winter the tents flood with water. In addition, the crowded living conditions mean children here are extremely vulnerable to catching viruses and germs.



SAVE THE CHILDREN



PHOTO: SAVE THE CHILDREN

The wreckage of a former pharmacy in Syria.

## SPOTLIGHT ON POLIO

The recent poliomyelitis outbreak in Syria is a clear illustration of how the degradation of the health system has failed Syria's children, and is a major setback for polio eradication worldwide. Polio is a stigmatising, crippling and potentially fatal disease if left untreated. But it is also a disease that can be prevented by a course of vaccinations during early childhood. Syria provided free polio vaccinations from 1964 and, following millions of dollars of investment and the efforts of thousands of healthcare workers, polio was eradicated in 1995.<sup>68</sup>

However, the breakdown of Syria's vaccination programme has resulted in the re-emergence of polio in Syria. Children born after 2010 have not been vaccinated for two years. There have been heavy restrictions in access to vaccines and health workers have not been able to reach children in need. There are now 83 cases of acute flaccid paralysis reported in Syria, the majority of cases being in children under two.<sup>69</sup> There are now 25 confirmed cases of polio,<sup>70</sup> but this is just the beginning. There are potentially thousands of people – up to 90,000 who are likely to be infected and silently spreading the disease to others.<sup>71</sup>

Because the current disease surveillance only covers parts of Syria, we must assume there will be many more cases than those confirmed so far. A joint resolution in November 2013 by the countries in the

World Health Organization Eastern Mediterranean Region declared the reversal of polio eradication an emergency, and raised concerns about the potential international spread of the virus.<sup>72</sup>

For oral polio vaccine to be effective, it needs to be administered multiple times. The number of doses it takes to immunise a child depends on the child's health and nutritional status, and how many other viruses he or she has been exposed to.<sup>73</sup> To contain the outbreak, a house-to-house oral polio vaccination campaign is needed with a minimum of 95% vaccination coverage rate and at least five rounds of vaccination.

Despite initial delays and setbacks, stronger, more coordinated response efforts are now under way and it is hoped that this will halt the further spread of the polio virus. The immunisation of a majority of the target population of children in the first round of the recent polio vaccination campaign was largely thanks to the efforts of hundreds of community vaccinators, who risked their lives to deliver polio vaccines door to door, in some cases despite heavy fighting and insecurity.

An expanded programme on immunisation urgently needs to be re-started in conflict-affected areas, so that children have access to routine immunisation and can be protected against diseases like meningitis, diphtheria, typhoid and hepatitis.

\* The figure of 90,000 has been corrected from the previous version of this report.



# 7 RECOMMENDATIONS

As this report has shown, three years of conflict have taken a devastating toll on the health of Syria's children. They are not only killed by shells and bullets, they are becoming sick and dying because they cannot access the healthcare they have a right to. Children are contracting preventable and treatable diseases, and even routine injuries become life-threatening because of the destruction of medical facilities, the shortage of skilled staff, and the lack of access to medical supplies and equipment. Women are giving birth with no or little skilled help, and newborn babies are dying in Syria every day who would have survived if their mothers had had access to proper services. As long as the conflict goes on, children will continue to suffer, but in the meantime some immediate steps can and must be urgently taken to reduce the needless suffering and deaths.

- Most importantly, all parties to the conflict must immediately implement UN Security Council resolution 2139 and allow unfettered humanitarian access to all parts of Syria; the international community must make implementing this resolution its top priority. Humanitarian access is critical to allow children and their families to receive life-saving medicine and food. If the political will can be found to allow chemical weapons inspectors to reach besieged areas, the international community must surely be able to find the will to allow medicine, vaccines and other desperately needed aid to reach children. Impartial humanitarian agencies must have unfettered access in all areas. This must include permission for aid to cross conflict lines, for the lifting of sieges or, as a minimum, humanitarian pauses to allow aid into besieged areas and across borders where this is the most efficient route. This could mean the difference between life and death for millions of children and their families suffering inside Syria.
- Parties to the conflict must not target or allow the military use of health facilities. Medical facilities must be respected and protected in all circumstances – they must not be used for military purposes. Attacks against health facilities are a war crime under international law, and anyone found to be violating the obligation to respect the protected status of medical facilities should be held accountable. Similarly, those providing health services also enjoy protected status and should be allowed to carry out their duties in order to assist the sick and wounded without interference.
- Immediate investment in and access to child-focused health services is needed. Of the remaining public hospitals, only half are equipped to manage childhood diseases, and many facilities lack the proper equipment and medicine for children with severe injuries or chronic diseases. Increased psychosocial support for children experiencing trauma is also necessary. Additional neonatal services should be introduced, including skilled birth attendants, the proper equipment for deliveries, and support to assist and encourage mothers to breastfeed exclusively. Capacity-building is needed to increase the number of community health workers with a focus on childhood and neonatal issues, and donors should ensure sufficient funding for these types of services.
- 'Kangaroo mother care' should be promoted as a first intervention in place of incubators for premature and low birth-weight babies. The method involves infants being carried, usually by the mother, with skin-to-skin contact. It is a simple, no cost, intervention that, unlike incubators, does not require electricity, and could address the issue of babies dying in incubators. Research has shown this method to be one of the most promising ways to save preterm and low birth-weight babies, and it can prevent infections; promote breastfeeding; regulate the baby's temperature, breathing and brain activity; and encourage mother and baby bonding.

- Agencies and health workers operating in Syria should prioritise and promote exclusive breastfeeding over breast-milk substitutes for infants aged six months and under. Any use and distribution of infant formula should be based on a careful needs assessment according to strict protocol, as defined in the Operational Guidance on Infant and Young Child Feeding in Emergencies and the International Code for Marketing of Breast-milk Substitutes. Creation of an environment and provision of skilled support to protect, promote and support breastfeeding and appropriate complementary feeding are vital life-saving interventions and should be prioritised in the humanitarian response in Syria.
- Access to vaccines for children who have gone unprotected for over two years must be urgently prioritised. The recent progress made in vaccinating children against polio demonstrates that even in the midst of conflict, vaccinations can be administered. Agencies undertaking forthcoming rounds of polio vaccinations, and the donors who are supporting them, need urgently to start to plan and prioritise establishing an expanded programme of immunisation, to ensure that all antigens are provided to children who have missed out on routine vaccinations. This should include the standard childhood vaccines such as those for measles, mumps and rubella, hepatitis, diphtheria, and typhoid – diseases that are among the top killers of children under the age of five globally and are making a comeback in Syria.
- The continuing conflict makes collection, collation and dissemination of routine surveillance on childhood disease outbreaks and epidemics and mortality rates and causes extremely difficult in most parts of Syria. In many cases, humanitarian agencies have only anecdotal evidence to rely on to assess the scale of the crisis for children's health, and disease rates are likely to be much higher than currently reported. Support is needed from donors, the government and local authorities to ensure that early warning and monitoring systems are funded and able to identify and respond to suspected disease outbreaks.

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# A DEVASTATING TOLL

The impact of three years of war  
on the health of Syria's children

“We received a little girl with critical injuries; we could do nothing but wait for her to die because we didn't have the equipment or the medicines. Till now I can't remove her face from my mind.”

Anas (name changed to protect identity), health worker

Syria's three-year civil war has had a devastating impact on children. At least 1.2 million children have fled the conflict and become refugees in neighbouring countries, while another 4.3 million children in Syria are in need of humanitarian assistance. These horrifying facts are recognised worldwide. But this report for the first time tells another, less obvious, story of the forgotten casualties of war.

It is not just the bullets and the shells that are killing and maiming children. They are also dying from the lack of basic medical care. Syria's health system has been devastated. As a result, increasing numbers of children are suffering and dying from diseases that would previously either have been treated or prevented from taking hold in the first place.

This report looks at the destruction of the health system in Syria and what this means for children and their mothers. It outlines the lack of skilled medical staff and of access to child-focused care, equipment and medicine; the impact of the breakdown in the healthcare system on maternal and newborn health; and the rise of vaccine-preventable and infectious diseases in children. In short, Syria's humanitarian crisis has become a devastating health crisis.

[savethechildren.org.uk](http://savethechildren.org.uk)