

# Every child counts: Lessons from the South African Child Death Review pilot

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In the 20 years since the start of democracy, government has invested substantially in policies and programmes to reduce child mortality and to meet the Millennium Development Goals.<sup>1,2</sup> Under-five mortality has declined from 56 deaths per 1,000 live births in 2009 to 41 per 1,000 live births in 2011<sup>3</sup>; yet this still equates to 59 deaths per day – most of which are preventable. There are limited published data on child mortality in older children, but vital registration data indicate that deaths from injuries increase as children get older.<sup>4</sup>

In order to prevent child deaths and strengthen our health and child protection systems, we need a better understanding of how and why children are dying. Vital registration data are an essential part of this process and enable us to track the extent and causes of child mortality. Yet, vital registration data are incomplete and – in 16% of cases – the cause of death is ill-defined.<sup>5</sup>

The Child Problem Identification Programme aims to address these gaps by auditing deaths of children in hospital and identifying modifiable causes in order to strengthen the health system's response at hospital, clinic and community levels.<sup>6</sup> But this excludes the majority of child deaths (55%) that occur outside health facilities.<sup>7</sup>

The child homicide study conducted by the Medical Research Council in 2009 started to shed light on this problem by identifying child murders reported at mortuaries and then drawing on police data to investigate the circumstance of each death. This study estimated that 1,018 children under the age of 18 were murdered in South Africa in 2009 and just under half of these children (44.6%) were murdered in the context of child abuse and neglect.<sup>8</sup> The study also noted that child murders were poorly investigated by the police<sup>9</sup> and that a lack of co-ordination between health, police and social services compromised the management of child abuse deaths.

The Child Death Review pilot was initiated by the Children's Institute, University of Cape Town, in response to these challenges and reviewed not only child murders but all nonnatural and sudden unexpected deaths that are referred to forensic services for determination of cause of death.

### **Benefits of child death reviews**

Child death review (CDR) teams have been implemented in high-income countries for the past two decades. These multidisciplinary teams bring together representatives from law enforcement, social services, health, forensic pathology and prosecution services who meet regularly to share case-specific information and review the circumstances of child deaths.<sup>11</sup> These CDR teams have proven effective in improving the identification of child maltreatment deaths, identifying modifiable causes of death, and using these findings to prevent child injury and maltreatment.<sup>10</sup>

### The South African pilot

The South African CDR pilot modelled this multidisciplinary approach to facilitate a co-ordinated response between the police, forensic pathology services, prosecution authorities, paediatricians and social services in the management of child deaths. The pilot aims to enable the effective reporting and investigation of suspected child abuse and neglect cases, as mandated by the Children's Act, in order to improve the identification of fatal child abuse cases, ensure better case outcomes, and protect other children who may be at risk. The CDR pilot also aims to test the efficacy of CDR teams in the South African setting and their potential role in strengthening response systems and preventing future child deaths.

The CDR pilot aimed to:

- Establish CDR teams at two sites.
- Facilitate inter-agency collaboration.
- Understand how and why children die, with a particular focus on the causes of non-natural and sudden unexpected deaths.
- Identify potential modifiable factors.
- Recommend systems improvements based on gaps identified through the review process.
- Establish whether a multi-agency approach is feasible in the South African setting.

### The pilot sites

Salt River and Phoenix mortuaries were selected as the pilot sites based on interest from the forensic pathologists, the difference in the size of the mortuaries and the diversity of the catchment districts.

Phoenix mortuary is based in Durban North and its catchment area includes the large informal settlements of KwaMashu and Inanda as well as outlying rural areas of Ndwedwe and Ntuzuma. Salt River mortuary serves the suburbs, townships and informal settlements of Cape Town with a catchment extending from Atlantis to Kommetjie, and from Camps Bay to Mitchells Plain.

Research brief

#### What kind of deaths should be investigated by forensic pathology services?

All deaths in South Africa must be certified by a medical practitioner and the death registered with the Department of Home Affairs as required by the Births and Deaths Registration Act of 1992. However, nonnatural deaths (such as suicides, homicides, and other injury deaths) cannot be certified by a medical practitioner. These cases are governed by the Inquest Act of 1959, and a medico-legal post mortem examination has to be performed to determine the cause of death. This includes all sudden, unexpected and unexplained deaths which also have to undergo a medico-legal post mortem examination to establish cause of death.

#### Definitions

Autopsy: a medico-legal examination performed in terms of the Inquest Act of 1959 to determine the cause of death in individuals who died as a result of non-natural causes (or where the cause of death is not apparent or of an unexpected nature), in order to facilitate further legal decisions and proceedings.

**Child**: as defined by the Bill of Rights and Children's Act of 2005, a person under the age of 18 years.

**Child murder**: the intentional, unlawful killing of a child for which another person is held responsible (adapted from SA Common Law).

Fatal child abuse: all forms of physical, sexual abuse, neglect or negligent treatment resulting in the child's death, in the context of a relationship of responsibility and care.

**Stillbirth:** an infant that was potentially viable. but born with no signs of life.

Sudden unexpected death: when a child dies at home and is not being treated for a medical condition that can result in death.

#### Suspected child abuse and neglect:

as defined in the Children's Act of 2005, a suspicion of any form of harm or ill-treatment deliberately inflicted on a child, including:

- a. assaulting a child or inflicting any other form of deliberate injury to the child;
- b. sexually abusing a child or allowing a child to be sexually abused.
- c. neglect or the " failure by the parent or caregiver of a child to provide for the basic physical, intellectual, emotional or social needs despite having the means to do so" (emphasis added).

## 2 Every child counts. A research brief.

### **Key findings**

A total of 711 cases were reviewed from 1st January to 31st December 2014: Phoenix mortuary CDR team reviewed 163 child deaths while Salt River mortuary team reviewed 548 cases – as this large urban mortuary saw three times the number of child deaths over the same period. Children accounted for 11.4% of all bodies seen at Phoenix mortuary, and 15.9% of bodies at Salt River mortuary.

More than half (53%) of all the child deaths reviewed were due to natural causes and 43% were due to non-natural causes and 4% were undetermined. A significantly higher proportion of natural deaths were reviewed at Salt River mortuary (61%) than at Phoenix mortuary (28%) as more natural deaths were referred to the forensic pathology service from the community (including homes, clinics and hospitals) in the Western Cape. Although the eThekwini district in KwaZulu-Natal has a higher proportion (61.4%) of deaths in the health sector compared to City of Cape Town (44.8%), <sup>12</sup> this cannot fully explain the large difference in proportion of natural deaths between the two sites. This difference might also be due to a less established forensic pathology service at Phoenix mortuary and different referral practices in communities and criteria used by the two mortuaries for cases where the cause of death is not apparent. These findings also suggest that medical practitioners in communities in KwaZulu-Natal may be more willing to complete death certification for out-of-hospital child deaths than those in the Western Cape.

However all non-natural and sudden unexpected deaths must undergo a medico-legal post mortem examination. This means doctors certifying sudden out-of-hospital death are not following the legal requirements outlined in the National Health Act of 2003 and Regulations read with the Inquest Act of 1959. The failure to conduct a post mortem examination may lead to incorrect coding of the cause of death, compromise the accuracy of vital registration data and potentially result in someone getting away with murder.



Figure 1: Proportion of natural and non-natural deaths at Salt River and Phoenix mortuaries. 2014

#### Leading causes of death

The overall leading causes of death are lower respiratory tract infections followed by homicide, road traffic injury deaths and diarrhoea. This indicates that infectious diseases and injuries were key drivers of child mortality in both mortuaries, based on the single underlying cause of death. This does not take account of other contributing factors such as nutritional status of the child or HIV exposure.

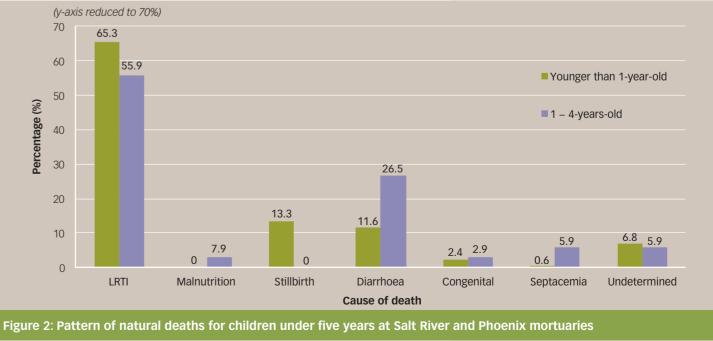
#### Table 1: Overall top 10 specific causes of death

Lower respiratory tract infection	31.8%
Homicide	14.9%
Road traffic injury	13.0%
Diarrhoea	7.0%
Stillbirth	6.3%
Burn	4.5%
Suicide	3.1%
Drowning	2.6%
Electrocution	2.3%
Congenital	2.3%

#### Natural deaths

Most (96%) of the natural deaths occurred in the under-five age group with the majority (84%) of these deaths occurring in infants younger than one year old. Lower respiratory tract infections (LRTI), diarrhoea and stillbirths were the most common natural deaths at both sites. Just under half (44.3%) of the LRTI infant deaths were associated with prematurity, with a number of these deaths occurring soon after babies were discharged from hospital (see case 1). The majority of stillbirths occurred in the community without presenting to a health facility. They were all of viable gestational age and presented to the forensic pathology service as a concealment of birth.

In addition, a review of medical notes by the CDR teams indicated that 11.2% of the natural deaths were associated with possible health systems failures (where a child was taken to a health facility within 48 hours of death and medical management was suspected to be lacking based on a thorough evaluation of available data in each individual case). The majority of these deaths (79.1%) occurred in children younger than one year old.





#### Case 1: Natural death

A six-week-old baby presented at the mortuary as a sudden infant death. An autopsy found the cause of death was consistent with a lower respiratory tract infection in a premature baby. The baby was born at 31 weeks. He was put on a ventilator and received kangaroo mother care in a neonatal ward before being discharged a month after birth. The mother had a history of drug abuse and was counselled by the hospital social worker. Arrangements were made for the grandmother to assist with the care of the baby; yet he died two days after discharge.

#### **Case 2: Electrocution**

An 11-month baby was found unresponsive outside the front door of her shack in the informal settlement of KwaMashu, KwaZulu-Natal, with an electrical wire in her hand. The infant was in the care of her mother at the time. She was busy with household chores and did not notice the child crawling out the door of the two-bedroom shack. This death could have been prevented if local authorities prioritised electrification in a safe and responsible manner and if caregivers were educated about the potential dangers of electricity and how to protect young children from live wires.

#### Non-natural deaths

The majority of non-natural deaths were due to homicide followed by road traffic injuries. suicides and electrocutions. One in four non-natural deaths were caused by road traffic injuries and the majority of these were pedestrians aged 5 – 14-years-old. Most of these deaths took place on the way to and from school.

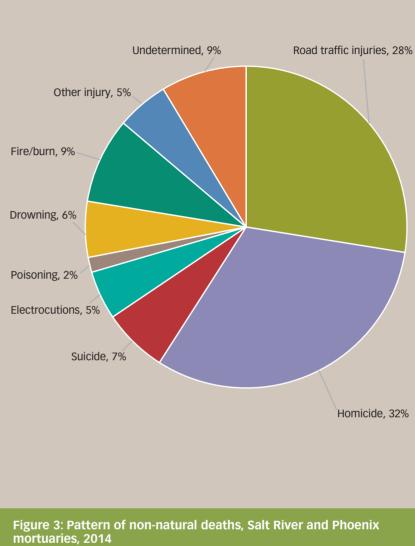
In addition, 17 children were electrocuted with a disproportionate number of electrocutions in the Phoenix district (n = 13). Most of these children were younger than 10 years old, with very young children most at risk due to their developmental stage. The majority of these deaths were caused by informal electricity connections primarily in informal settlements where basic services are not provided by local authorities (see case 2).

#### Child murder, child abuse and neglect

A total of 110 child murders were reviewed by the CDR teams. Phoenix saw fewer murders (n = 30) than Salt River (n = 80). This difference can probably be attributed to the large number of children killed in Western Cape communities such as Lavender Hill and Hanover Park where gang violence is endemic. There is a marked increase in homicides as children get older: Forty-nine young men were murdered in the 15 – 17-year age group. Teenage boys are most likely to be killed in the context of conflict between peers or gang violence (see case 3).

The second largest driver of child murder was child abuse (n = 47). Over three-quarters of these children (78%) were under five years old, and infants under one year were at greatest risk. Mothers were more likely (86.5%) responsible for the deaths of infants with a large number of these deaths due to abandonment of a newborn shortly after birth. The mothers' partners were more likely (60%) to be responsible for deaths in the 1 - 4-yearold age group. Nearly half (45%) of under-five deaths occurred at home and murders were more likely to take place in a public space as children got older and started to spend more time outside the home, often without adequate supervision.

In addition to these fatal abuse cases, 28 cases of neglect were identified after in-depth discussion between the multidisciplinary team. These were then referred to a child protection agency for investigation into the home circumstances of the children (see case 4). Some of the cases currently identified as neglect could also be classified as homicide, but this will depend on the findings of an inquest court which can take between two to five years to complete its inquiry. The review and referral of neglect cases to a child protection agency for investigation proved effective in identifying and protecting other children at risk and in providing support to families in crisis.



#### Case 3: Murder

A 17-year-old male moved to Cape Town from the Eastern Cape a year prior to his death and was living on his own in a shack in a township. He started mixing with the wrong friends and used drugs and alcohol. He was at a tavern where he had an argument with a 19-yearold "friend" over a girlfriend they were both pursuing. The argument escalated and the friend drew a knife and stabbed him. The cause of death was a stab wound to the heart. The 19-year-old had no prior convictions but was a known drug user. He was charged with murder and the case is in court. Interventions such as recreational and leisure activities to keep young men off the street are important to prevent such deaths.

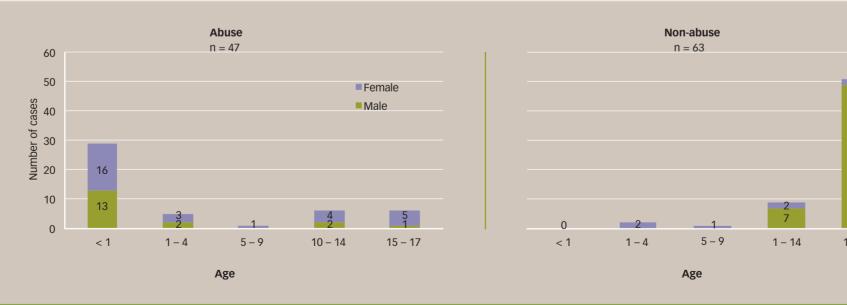


Figure 4: Number of child abuse homicides compared to non-abuse homicides by age and sex, Phoenix and Salt River mortuaries, 2014





#### Case 4: Neglect

An eight-year-old boy died at home as a sudden unexpected death. On examination it was found that he had cerebral palsy and was severely wasted, weighing only eight kilogrammes. The contributing factors were severe dehydration and malnutrition, and the overall cause of death was gastro-enteritis. On investigation it was established that the child was placed in foster care when he was a month old but was not under the care of a specialist for his medical condition. Two months prior to his death he was brought to the Red Cross Children's Hospital with a non-accidental injury and was admitted pending an investigation into his foster care placement. The child protection agency returned him to the care of the foster mother under their supervision. It is important that high-risk placements are monitored vigilantly, and with routine medical checks, before foster care placements are extended.

#### Case 5: Using the child death review to enhance child protection

An eight-month-old baby boy presented as a sudden infant death and the cause of death was identified as gastro-enteritis and severe dehydration. The baby was in the care of his mother at the time of death; she claimed that the baby had a bottle feed and was put to sleep in the evening, but was found unresponsive the next morning. The autopsy showed the infant had foetal alcohol syndrome and was underweight for age. The baby had attended the local clinic for immunisations, yet no medical assistance was sought when he was ill. Based on these indicators of neglect, the case was referred to the local child protection agency (CPA) to investigate the home circumstances of the remaining children. It was established that two other children had died in 2009 and 2011, despite the CPA having known about the family since 2008 when they first investigated the care of the children due to the mother's alcohol abuse. As an outcome of the CDR, the two remaining siblings, aged four and 10 years, were removed from the mother's care and a children's court enquiry was opened.

### **Conclusion and recommendations**

The CDR pilot illustrates how large numbers of children continue to die both as a result of natural and non-natural deaths in South Africa. Introducing a systematic inquiry into circumstances surrounding sudden unexpected deaths and non-natural child deaths has provided invaluable insights into why and how children die at the two sites. This enquiry has also enabled the collaborative management of child deaths. The multidisciplinary approach brings together evidence from medical records, autopsy reports, police and social services investigations and enables more effective identification of child abuse and neglect, helps identify systems failures within different departments and opportunities to strengthen communication and co-ordination between them.

The CDR pilot has identified a problem with the management of premature babies who spend weeks in hospital and die shortly after discharge due to ineffective home care programmes (see case 1). In addition, the absence of effective co-ordination and communication between health, criminal justice and child protection systems was detected, which resulted in failures to protect children and support families in crisis (see case 5).

The CDR pilot has also demonstrated how a multi-agency approach can enhance reporting and enable a real-time response to ensure children are safer in their homes. The value of making joint decisions also took the burden off the forensic pathologist and police as investigating child deaths in the home is incredibly difficult, particularly when there is a suspicion of a non-accidental injury at the hands of someone close to the child. Social services investigations have also proved crucial in identifying families in distress who require ongoing support to prevent further negative outcomes.

Nevertheless, the pilot has also identified key weaknesses in the health, criminal justice and child protection systems which require a targeted approach to reduce the burden from preventable child deaths.

#### • Support services for pregnant women and new mothers

The CDR pilot highlighted the ways in which poverty, poor living conditions, substance abuse and limited support for new mothers compromised care and increased the vulnerability of premature babies to die from natural causes such as LRTI. Early identification of at-risk mothers during pregnancy or at birth and the provision of support services and home-visiting programmes (as proposed in the draft Policy on Early Childhood Development) are essential.

#### Strengthen early identification and prevention services

Child protection requires a multi-agency response which enables the departments of Health, Social Development and Basic Education to work collaboratively to identify families who show signs of strain. The Children's Act provides for a range of prevention and early intervention services to support vulnerable families. These interventions should ideally be integrated with community health services as this is often a key point of entry for children into the system. Building the resilience of families is critical to prevent child abuse and neglect, and to promote child well-being.

#### Respond timeously to children who have been abused and neglected

Child protection services have to act speedily in the investigation of reported cases to protect children from continued abuse and neglect, and to prevent fatalities. Social service professionals require additional training to ensure that they are able to identify children at risk and develop concrete protection plans to secure children's safety. Junior social workers require adequate supervision and those involved in case management reviews should be held accountable for poor case management.

#### Improve the criminal justice response

The CDR process has facilitated improved communication between forensic pathology services, the South African Police Service (SAPS) and the Office of the Director of Public Prosecutions to ensure timely investigation into all child deaths. It has highlighted the need to improve death-scene investigation by both SAPS and forensic pathology services as this guides the overall investigation and determination of cause of death. Investigating child deaths requires skill to interview families, particularly in the context of suspected child abuse. Standard operating procedures for the investigation of child deaths, combined with specialised training for investigating and forensic officers, are critical to improve case outcomes. This should allow for improved reporting of suspected child abuse and neglect cases to social services through the routine use of the Form 22 as mandated by the Children's Act.

#### • Fast-track the provision of adequate housing and basic services

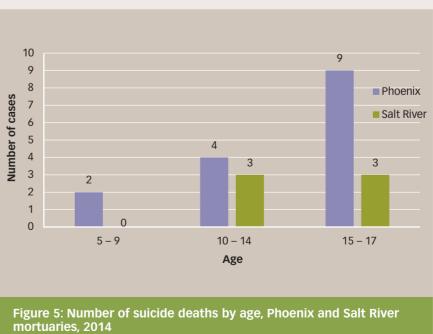
A high proportion of child deaths were due to lower respiratory tract infections, diarrhoea and electrocutions, which highlight poor access to adequate housing, electricity, water and sanitation. These deaths are unacceptable and the provision of basic services to informal communities must be prioritised.

#### Suicide deaths

Suicide was one of the leading causes of child mortality in this child death review, with Phoenix mortuary showing a significantly higher number of suicides in all age groups. This is not unusual as national epidemiological studies on injury indicate that South Africa has a suicide rate of 11.5 - 25 per 100,000 deaths compared to a global rate of 11.6 – 16 per 100.000.13

Not much is known about suicidal behaviour in the younger age group as it is a rare event in younger children. The most common age for suicide in childhood is between 15 – 19-years-old which accounts for an average of 9.5% of non-natural deaths in this age group globally.14

While the numbers we are reporting are relatively small, there was a significant difference (p < 0.000) in the number of cases at the two sites. This points to a relatively high burden of suicide deaths at the Phoenix site. Further investigation is required to identify factors that increase the risk of suicide particularly in the Phoenix district (see case 6) and to inform the development of effective prevention programmes.



### Case 6: Suicide

A nine-year-old boy was found hanging from a tree by his father on his return from work one late afternoon. The incident happened during the school holidays, shortly after New Year. The police investigation concluded that there was nothing suspicious at the scene and that the death was a suicide, although no suicide note was left and the police investigation had no confirmation of the child's emotional state at the time of the hanging. The CDR team, after in-depth discussion, requested further investigation into the child's emotional state and home circumstances. The case was referred to the local child protection agency whose report revealed a vulnerable child who was raised by a single father and with no contact with his mother or siblings. His father was known as a harsh disciplinarian and neighbours reported the child was "afraid" of his father. Suicides among very young children require collaborative investigation between police and social services as such deaths need sensitive management to develop a clear picture of the circumstances leading to the suicide.

#### The Children's Institute, University of Cape Town

The Children's Institute is a leader in child policy research and advocacy in South Africa. Our activities focus on key challenges to the well-being of South Africa's children: poverty, inequality, HIV/AIDS, high infant and child mortality and morbidity, violence and abuse, and limited voice. Our purpose is to provide evidence to assist policy-makers and practitioners to create policies, programmes and institutions that support the best interests of the country's children.

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#### Strengthen community health services

Community health services need to be strengthened to ensure that caregivers of young children know: how to prevent common injuries and illnesses associated with illegal electricity connections, poor ventilation and unsafe drinking water; how to recognise the danger signs; and when to seek medical care. This requires further investment in the ward-based outreach teams to ensure the effective delivery of home- and community-based IMCI (Integrated Management of Childhood Illness).

#### Ensure learners' safety to and from school

The burden from road traffic injuries was found to be very high, with most children dying on the road while walking to and from school. This requires a co-ordinated response from the Department of Basic Education, Department of Transport and local governments. Roads need to be designed to ensure pedestrian safety (such as the provision of safety barriers and sidewalks) with a focus on areas close to schools.<sup>15</sup> Improvement of school transport should be prioritised, and road safety requires greater focus within the life orientation curriculum.

#### • Targeting boys to shift the pattern of violence

Teaching boys conflict management skills, providing sport and recreational activities in communities and developing peer-support systems at school have the potential to keep young men off the street and have a longer-term effect on their ability to manage conflict in the community and in their personal relationships.<sup>16</sup> In addition, programmes need to target men and boys to challenge gender norms, promote healthy and non-violent relationships and shift violent practices.

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