Mortality and causes of death in South Africa: Findings from death notification, 2013
Death is a permanent disappearance of all evidence of life after a live birth has occurred.
From death to statistics

1. Death occurs
   - Dr. verifies death & completes death DHA 1663 form

2. Submitted to DHA & entered on population register

3. Sent to Stats SA to code causes of death to ICD-10, process and analyze

Statistics released

Births and Deaths Registration Act, 1992
Statistics Act 1999
All diseases, morbid conditions, or injuries that either resulted in or contributed to death, and the circumstances of the accident or violence which produced any such injuries

Underlying causes of death
Death registration of adults is 94% complete.

77% of deaths were registered within the 3 Days of death as stipulated within the legislation in 2013 it was 75% in 2012.

- Statistics compiled in accordance with WHO standards
- General improvements noted in the quality of data
Findings
In 2013, 458 933 deaths occurred in South Africa.
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Number of deaths

Year of death

Decline in recorded deaths continues
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Provincial distribution of South Africa’s 458,933 recorded deaths -2013-

- GP 21%
- WC 10%
- EC 14%
- KZN 18%
- NW 8%
- NC 3%
- FS 7%
- MP 8%
- LP 10%

Foreign = 0.3%
Unspecified = 0.2%
Deaths per 1 000 population 2013

Northern Cape and Free State experienced the highest number of deaths per 1 000 people.
Deaths per 1 000 population by district 2013

Highest
1 Pixley ka Seme - 19
2 Xhariep - 18

Lowest
3 eThekwini - 5
How we die
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Distribution of deaths by main groups of causes death 2013

Total Deaths 458 933

25% Other Diseases
Distribution of deaths by causes death 2013

- 23% Infectious & parasitic disease
  - HIV disease
  - Protozoal
  - Viral infections
  - Other viral diseases
  - Other bacterial diseases
  - Tuberculosis

- 17% Circulatory system diseases
  - Hypertensive diseases
  - Cerebrovascular diseases

- 10% Respiratory diseases
  - Other acute lower respiratory diseases
  - Influenza & pneumonia

- 10% Metabolic disorders
  - Diabetes mellitus
  - Malnutrition

- 6% Metabolic disorders
  - Other
  - Blood & immune
  - Urinary system
  - Nervous system

- 25% Accidents & other external causes
  - Intentional self harm
  - Medical & surgical complications
  - Assault
  - Transport accidents

- 10% Undetermined intent

- 8% Cancers/Neoplasms
  - Male genital
  - Digestive organs
  - Female genital
  - Respiratory
  - Intestinal infectious diseases

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### Ranking of Top Ten Leading Causes of Death between 2012 and 2013

<table>
<thead>
<tr>
<th>2012</th>
<th>COD 2013</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis (9.9%)</td>
<td>Tuberculosis (8.8%)</td>
<td></td>
</tr>
<tr>
<td>Influenza and pneumonia (5.5%)</td>
<td>Influenza and pneumonia (5.2%)</td>
<td></td>
</tr>
<tr>
<td>Cerebrovascular diseases (5.0%)</td>
<td>HIV disease (5.1%)</td>
<td>Cerebrovascular diseases (4.9%)</td>
</tr>
<tr>
<td>Other forms of heart disease (4.6%)</td>
<td>Diabetes mellitus (4.8%)</td>
<td>Other forms of heart disease (4.6%)</td>
</tr>
<tr>
<td>Diabetes mellitus (4.4%)</td>
<td></td>
<td>Diabetes mellitus (4.8%)</td>
</tr>
<tr>
<td>HIV disease (3.9%)</td>
<td>Hypertensive diseases (3.7%)</td>
<td>Hypertensive diseases (3.7%)</td>
</tr>
<tr>
<td>Hypertensive diseases (3.4)</td>
<td>Intestinal infectious diseases (3.4%)</td>
<td>Intestinal infectious diseases (3.4%)</td>
</tr>
<tr>
<td>Other viral diseases (3.1%)</td>
<td>Other viral diseases (3.0%)</td>
<td>Other viral diseases (3.0%)</td>
</tr>
<tr>
<td>Intestinal infectious diseases (3.1%)</td>
<td>Chronic lower respiratory diseases (2.6%)</td>
<td>Chronic lower respiratory diseases (2.6%)</td>
</tr>
<tr>
<td>Chronic lower respiratory diseases (2.5%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Top ten leading causes of death (based on ICD-10) in 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>Male Number</th>
<th>%</th>
<th>Rank</th>
<th>Female Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23,791</td>
<td>9.9</td>
<td>1</td>
<td>16,582</td>
<td>7.6</td>
</tr>
<tr>
<td>2</td>
<td>12,133</td>
<td>5.1</td>
<td>5</td>
<td>11,480</td>
<td>5.3</td>
</tr>
<tr>
<td>3</td>
<td>11,643</td>
<td>4.9</td>
<td>4</td>
<td>11,481</td>
<td>5.3</td>
</tr>
<tr>
<td>4</td>
<td>9,651</td>
<td>4.0</td>
<td>6</td>
<td>11,399</td>
<td>5.2</td>
</tr>
<tr>
<td>5</td>
<td>9,518</td>
<td>4.0</td>
<td>3</td>
<td>12,920</td>
<td>5.9</td>
</tr>
<tr>
<td>6</td>
<td>8,699</td>
<td>3.6</td>
<td>2</td>
<td>13,484</td>
<td>6.2</td>
</tr>
<tr>
<td>7</td>
<td>7,441</td>
<td>3.1</td>
<td>8</td>
<td>8,259</td>
<td>3.8</td>
</tr>
<tr>
<td>8</td>
<td>7,262</td>
<td>3.0</td>
<td>10</td>
<td>4,757</td>
<td>2.2</td>
</tr>
<tr>
<td>9</td>
<td>6,459</td>
<td>2.7</td>
<td>9</td>
<td>7,102</td>
<td>3.3</td>
</tr>
<tr>
<td>10</td>
<td>6,352</td>
<td>2.7</td>
<td>7</td>
<td>10,388</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Diabetes ranks as the second leading COD for women, but falls outside of the Top 5 for men.
Leading causes of death within each province

- **Influenza and pneumonia**
- **Tuberculosis**
- **Diabetes**
- **HIV disease**
Leading cause of death by district 2013

- Cerebrovascular diseases
- Chronic lower respiratory diseases
- Diabetes
- HIV disease
- Influenza and pneumonia
- Other forms of heart disease
- Tuberculosis

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Main groups of based on underlying causes 1997-2013
Percentage of total deaths

- Infectious and parasitic diseases (A00-B99)
- Circulatory system (I00-I99)
- Endocrine, nutritional and metabolic disease
- Respiratory system
- Neoplasms (C00-D48)

- Certain infectious and parasitic diseases
- Endocrine, nutritional and metabolic diseases
- Diseases of the circulatory system
- Neoplasms
- Diseases of the nervous system
- Diseases of the digestive system
- External causes of morbidity and mortality
- Perinatal conditions

The South Africa I know, the home I understand
Ages at which we die
Shift from deaths occurring at younger age.

Percentage distribution of deaths by age and sex
2012 vs 2013
The three leading underlying causes of death for infants

<table>
<thead>
<tr>
<th>Cause</th>
<th>Neonatal (0-28 days)</th>
<th>Post-neonatal (29 days to 11 months)</th>
<th>Less than 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intestinal infectious diseases</td>
<td>35%</td>
<td>22%</td>
<td>14%</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>13%</td>
<td>15%</td>
<td>14%</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>12%</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Respiratory and cardiovascular disorderspecific to the perinatal period</td>
<td>11%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Other disorders originating in the perinatal period</td>
<td>13%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Disorders related to length of gestation and fetal growth</td>
<td>5%</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>
The three leading underlying causes of death for children

- **1-4 years**
  - Intestinal infectious diseases: 17%
  - Influenza and pneumonia: 10%
  - Malnutrition: 7%

- **Under 5 years**
  - Intestinal infectious diseases: 15%
  - Respiratory and cardiovascular disorders: 11%
  - Influenza and pneumonia: 9%

- **5-14 years**
  - Tuberculosis: 7%
  - Intestinal infectious diseases: 6%
  - Influenza and pneumonia: 5%
The three leading underlying causes of death for age groups:

**15-44**
- Tuberculosis: 15%
- Human immunodeficiency virus: 11%
- Other viral diseases: 6%

**45-64**
- Tuberculosis: 10%
- Diabetes mellitus: 6%
- Cerebrovascular diseases: 5%

**65+**
- Cerebrovascular diseases: 9%
- Diabetes mellitus: 8%
- Other forms of heart disease: 8%
Communicable, Non-communicable and Injuries
1997 Gap was 24% points

2013 13%

Percentage of deaths: communicable, non-communicable and injuries

Year of death

Communicable
Non Communicable
Injuries

The South Africa I know, the home I understand
Continuous rise in deaths due to diabetes mellitus and hypertensive diseases
From Ages 10-44 women have greater percentage of deaths due to communicable diseases.
Percentage of deaths: Non-Communicable

Females have higher non-communicable percentage of death in all age groups.
Percentage of deaths due to injuries for males is above 60% in 20-24 Age Group

Percentage of deaths due to injuries for females peaks at 28% and much younger age group (5-9)
The percentage of non-natural deaths in South Africa has decreased over the years, but has increased slightly since 2009.

Non-natural deaths include all external causes of morbidity and mortality.
Number non-natural deaths 1997-2013
Percentage of deaths that were non-natural 2013

- WC: 12.8%
- NC: 11.2%
- NW: 8.4%
- FS: 9.5%
- EC: 10.7%
- KZN: 10.2%
- MP: 10.5%
- LP: 8.0%
- GP: 10.6%
COD 2013

Percentage of non-natural deaths by broad groups 2013

Other causes of accidental injury: 56%
- Undetermined intent: 16%
- Transport accidents: 12%
- Assault: 11%
- Complications of medical and surgical care: 4%
- Self-harm: 1%

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Distribution of deaths due to other external causes of accidental injury 2013

- Accidental exposure to other/unspecified factors: 46%
- Other accidental threats to breathing: 18%
- Exposure to inanimate mechanical forces: 16%
- Exposure to smoke, fire and flames: 8%
- Accidental drowning and submersion: 6%
- Accidental poisoning: 3%

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Transport accident deaths
Percentage of non-natural Deaths within each province

Limpopo experienced the highest number of deaths due to transport accidents as a percent of non-natural deaths.
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Transport accidents by death month

Percentage of deaths due to transport accidents peaked in the month of June.
Assault related deaths
Percentage of non-natural deaths within each province

Northern Cape experienced the highest number of deaths due to assault as a percent of non-natural deaths.
Deaths due to assault by death month

Percentage of deaths due to assault peaked during November and December.
## Assault deaths in 2013

<table>
<thead>
<tr>
<th>Assault type</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp object (X99)</td>
<td>4 270</td>
<td>85,1</td>
</tr>
<tr>
<td>Unspecified means (Y09)</td>
<td>485</td>
<td>9,7</td>
</tr>
<tr>
<td>Other and unspecified firearm discharge (X95)</td>
<td>85</td>
<td>1,7</td>
</tr>
<tr>
<td>Blunt object (Y00)</td>
<td>61</td>
<td>1,2</td>
</tr>
<tr>
<td>Neglect and abandonment (Y06)</td>
<td>39</td>
<td>0,8</td>
</tr>
<tr>
<td>Hanging, strangulation and suffocation (X91)</td>
<td>35</td>
<td>0,7</td>
</tr>
<tr>
<td>Sexual assault by bodily force (Y05)</td>
<td>14</td>
<td>0,3</td>
</tr>
<tr>
<td>By other specified means (Y08)</td>
<td>9</td>
<td>0,2</td>
</tr>
<tr>
<td>Bodily force (Y04)</td>
<td>7</td>
<td>0,1</td>
</tr>
<tr>
<td>Other maltreatment syndromes (Y07)</td>
<td>6</td>
<td>0,1</td>
</tr>
<tr>
<td>Rifle, shotgun and larger forearm discharge (X94)</td>
<td>3</td>
<td>0,1</td>
</tr>
<tr>
<td>Drowning and submersion (X92)</td>
<td>2</td>
<td>0,0</td>
</tr>
<tr>
<td>Smoke, fire and flames (X97)</td>
<td>2</td>
<td>0,0</td>
</tr>
<tr>
<td>Unspecified chemical or noxious substance (X90)</td>
<td>1</td>
<td>0,0</td>
</tr>
<tr>
<td><strong>Total deaths</strong></td>
<td>5 019</td>
<td>100,0</td>
</tr>
</tbody>
</table>
Assault deaths in 1997-2013

Unspecified means

Sharp Object as a cause of death, has remained the main contributing factor, over the period 1997 and 2013

Other and unspecified firearm discharge
Where we die
Where we die

- **Home**: 23.2% (2013), 24.9% (2012)
- **Dead on arrival**: 2.1%
- **Emergency Room outpatient**: 1.7%
- **Hospital**: 44.2% (2013), 42.6% (2012)
- *Other, Unknown or Unspecified*: 22.9%

*Statistics South Africa*
HIV Reporting
HIV and HIV related deaths

<table>
<thead>
<tr>
<th>Year</th>
<th>HIV</th>
<th>HIV-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>12.0</td>
<td>88.0</td>
</tr>
<tr>
<td>1998</td>
<td>10.3</td>
<td>89.7</td>
</tr>
<tr>
<td>1999</td>
<td>11.3</td>
<td>88.7</td>
</tr>
<tr>
<td>2000</td>
<td>9.6</td>
<td>90.4</td>
</tr>
<tr>
<td>2001</td>
<td>7.2</td>
<td>92.8</td>
</tr>
<tr>
<td>2002</td>
<td>6.9</td>
<td>93.1</td>
</tr>
<tr>
<td>2003</td>
<td>6.6</td>
<td>93.4</td>
</tr>
<tr>
<td>2004</td>
<td>7.1</td>
<td>92.9</td>
</tr>
<tr>
<td>2005</td>
<td>7.4</td>
<td>92.6</td>
</tr>
<tr>
<td>2006</td>
<td>6.8</td>
<td>93.2</td>
</tr>
<tr>
<td>2007</td>
<td>6.4</td>
<td>93.6</td>
</tr>
<tr>
<td>2008</td>
<td>7.2</td>
<td>92.8</td>
</tr>
<tr>
<td>2009</td>
<td>9.2</td>
<td>90.8</td>
</tr>
<tr>
<td>2010</td>
<td>10.4</td>
<td>89.6</td>
</tr>
<tr>
<td>2011</td>
<td>11.0</td>
<td>89.0</td>
</tr>
<tr>
<td>2012</td>
<td>13.6</td>
<td>86.4</td>
</tr>
<tr>
<td>2013</td>
<td>18.0</td>
<td>82.0</td>
</tr>
</tbody>
</table>
From 2008 declining HIV related deaths lead to increasing HIV reporting among 15-44 age group
From 2008 declining HIV related deaths lead to increasing HIV reporting among 45-64 age group.
Western Cape main province driving the reporting of HIV particularly from 2007
Improvements in HIV reporting also pronounced in Northern Cape especially among 15-44 and 45-64 age groups.
Reporting of HIV among 15-44 and 45-64 in KwaZulu-Natal also one of the contributing factors to increasing reporting of deaths in HIV.
Trends in underlying causes of death, 1997-2013

- Tuberculosis
- Influenza & pneumonia
- HIV disease
- Intestinal infectious diseases
- Other viral diseases

The South Africa I know, the home I understand
Number of deaths due to HIV disease and specified causes: co-morbidity
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Number of HIV deaths vs. Death Year

- 6 239
- 23 203
Excerpts from Dr’s Trained in death certification
<table>
<thead>
<tr>
<th>Dr.</th>
<th>Level of comfort in stating HIV before and after training</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very comfortable</td>
<td>With the changes in the Notification of Death form, there is good confidentiality - not perfect, but good.</td>
</tr>
<tr>
<td>2</td>
<td>Very comfortable</td>
<td>If HIV is the main cause of death then it must be stated. The 4th page of the NOD is confidential and I have never had a problem writing HIV/AIDS there.</td>
</tr>
<tr>
<td>3</td>
<td>Very comfortable</td>
<td>Insurance forms not an issue in my place of work Forms are confidential</td>
</tr>
<tr>
<td>Dr.</td>
<td>Level of comfort in stating HIV before training</td>
<td>Reason</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>1</td>
<td>Somewhat comfortable</td>
<td>Was unsure of the legislation regarding the reporting of HIV</td>
</tr>
<tr>
<td>2</td>
<td>Somewhat comfortable</td>
<td>Would not write HIV often.</td>
</tr>
<tr>
<td>3</td>
<td>Somewhat comfortable</td>
<td>I had some reservations due to confidentiality limitations as well as lack of clarity on the legal provisions governing such disclosure</td>
</tr>
<tr>
<td>Dr.</td>
<td>Level of comfort in stating HIV before training</td>
<td>Reason</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>1</td>
<td>Somewhat comfortable</td>
<td>I realised the issue of confidentiality should not matter.</td>
</tr>
<tr>
<td>2</td>
<td>Somewhat comfortable</td>
<td>I was reluctant because insurance companies were giving the concerned families problems with the pay outs for funeral arrangements of life covers.</td>
</tr>
<tr>
<td>Dr.</td>
<td>Level of comfort in stating HIV before training</td>
<td>Reason</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>1</td>
<td>Not comfortable at all</td>
<td>Because of family members who will tell me that if the cause is HIV then the insurance won't pay them the money</td>
</tr>
<tr>
<td>2</td>
<td>Not comfortable at all</td>
<td>I was afraid of legal implications.</td>
</tr>
<tr>
<td>3</td>
<td>Not comfortable at all</td>
<td>HIV causes panic amongst family members (stigma) and the term was not divulged in any form as far as possible. Rather the condition resulting from HIV was documented. Furthermore, health insurance companies were not paying out if death was associated with HIV</td>
</tr>
</tbody>
</table>