HISTORY OF MEDICINE

Sources of South African mortality data, 1910 - 1992

D. E. Bourne

A complete bibliography is given of official statistical publications that are the primary source of mortality data (number of deaths, ages and causes) for the South African population for the period 1910 - 1992. Details of the edition of the International Classification of Diseases used in the reports are noted, as well as the causes of death listed in the reports.

Details of unpublished computer tapes used to produce these reports from 1968 onwards are also presented.


Cohort studies and studies of secular trends in mortality require a knowledge of the deaths in a population in respect of age and cause over a long period of time. It is difficult to locate all the official statistical reports on deaths for South Africa.

The official bibliography of statistical publications' is incomplete and does not list all reports relating to death. It gives no indication of the tabular content of these reports.

This paper provides a complete bibliography of the official statistical publications that are a primary source of the numbers of deaths by age and cause in the South African population. (Life tables are excluded from this study.)

Until 1924, each of the provinces had a different series of laws relating to the registration of births and deaths. In 1923, the Births, Deaths and Marriages Registration Act (No. 17), consolidating the laws of the various provinces, was passed. It came into force at the beginning of 1924. Under this act, registration was compulsory for all races in urban areas. For blacks in rural areas, registration was voluntary. All deaths in urban areas had to be certified by a medical practitioner, or an inquest had to be held. A medical certificate was not ordinarily required in the event of a death in a rural area.

Since 1924 death statistics have been tabulated by area of residence. The first year in which all death certificates were examined by a medical assessor attached to the office of census and statistics was 1929.

South Africa was a signatory to the agreement in Paris in 1909 which revised the then International Classification of the Causes of Sickness and Death (now the International Classification of Diseases, Injuries and Causes of Death (ICD)). The dates of revision of the ICD and the dates at which such revisions became effective in the statistical reporting of mortality in South Africa are given in Table I.

Table I. Revisions of the International Classification of Diseases

<table>
<thead>
<tr>
<th>ICD revision</th>
<th>Date</th>
<th>Dates of annual statistics used in South Africa</th>
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<tbody>
<tr>
<td>1st</td>
<td>1900</td>
<td>-</td>
</tr>
<tr>
<td>2nd</td>
<td>1909</td>
<td>1912 - 1921</td>
</tr>
<tr>
<td>3rd</td>
<td>1920</td>
<td>1922 - 1929</td>
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<td>4th</td>
<td>1929</td>
<td>1930 - 1938</td>
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<tr>
<td>5th</td>
<td>1939</td>
<td>1939 - 1948*</td>
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<tr>
<td>6th</td>
<td>1948</td>
<td>1949 - 1958†</td>
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<tr>
<td>7th</td>
<td>1955</td>
<td>1959 - 1967†</td>
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<td>8th</td>
<td>1965</td>
<td>1968 - 1977</td>
</tr>
<tr>
<td>9th</td>
<td>1975</td>
<td>1978</td>
</tr>
</tbody>
</table>

* Age-specific mortality statistics according to intermediate list of 87 causes only.
† Mortality statistics according to intermediate list of 150 causes except for blacks where an abridged list of 56 causes is used.
‡ For the period 1959 - 1966 mortality statistics are according to an intermediate list of 160 causes.

It should however be noted that certain additional codes have at times been added to the classification used in South Africa. These are listed in the explanatory notes that accompany the local versions of the classification. At times these codes fall outside the chapters of the classification where they belong. For example, in the 9th revision, code 609, cirrhosis of the liver, is classified a disease of the genito-urinary system instead of a disease of the digestive system. Code 509, mesothelioma, falls under respiratory diseases rather than carcinomas. These local codes are incorrectly omitted from the listings of the basic tabulation list of the 9th revision in the South African edition.

Not all the statistical reports on death have used the full ICD classification. The exceptions are indicated in the footnote to Table I.

Chronology

For the years 1910 - 1918 official mortality statistics were reported in the series Statistics of Population. These contained the full ICD list, 19 age categories and details of gender only for the period 1916 - 1918. For earlier years, deaths were listed separately by cause (abridged list) or by age.

This series was discontinued for reasons of economy and the statistics were subsequently issued in the form of a roneo pamphlet. These reports, for whites only, either list deaths by age (no cause), or by cause (abridged list) but with no ages given. For non-whites, only the total number of registered deaths is given.

From 1926 to 1938, an exceptionally detailed series of reports was issued — 'Report on the Vital Statistics of the Union of South Africa'. These reports had extensive commenting definitions of terms and analyses. They serve as a model which could with profit be emulated today.

Mortality data in respect of age and sex (12 categories) and cause (full ICD list) are given for the white population.

* In this paper the official South African governmental racial stratification of the population has been followed. No attempt has been made to indicate changes in official terminology over the period of time covered.
For non-whites, only the total number of registered deaths is given until 1937 when detailed age, sex and cause tables for the coloured population were introduced.

The war caused a hiatus in the issuing of vital statistics reports and it was only in 1961 that a report appeared covering the years up to 1958.\textsuperscript{2,3} Commentaries were now non-existent. Whites, coloureds and Asians were covered in separate tables in respect of age (22 categories), sex and cause, although the latter was an abridged list. Data for blacks began to appear, although for selected municipal areas only. Only a percentage distribution in respect of cause was given. Absolute numbers are omitted. Whites in South West Africa are covered in a separate table.

The next report\textsuperscript{2,3} covered the period 1959 - 1962 in the same format as the previous one, with the addition of the coloured population of South West Africa in a separate table. While an abridged ICD list was used for the recording of age-specific deaths for all years, a tabulation of causes is given for 1962 only for the full ICD-7, but this is not broken down according to age!

From 1963 onwards, the Department of Statistics began to issue a numbered series of reports (07-03-\textsuperscript{,}\textsuperscript{1,2,4,5} Initially this covered whites, coloureds and Asians. For the period 1963 - 1968, age-specific mortality data (22 categories) are given only for an abridged list of causes.\textsuperscript{6} From 1967 onwards they are given for the full ICD-7.\textsuperscript{7} From 1968, a separate report series (still utilising the 07-03-numbering sequence) was issued for blacks in selected urban magisterial districts. Age-specific mortality data (22 categories) were given for the full ICD-7.\textsuperscript{8} From 1978 a new series of reports was issued (07-05-\textsuperscript{9}) covering deaths of blacks throughout the country.\textsuperscript{9,10} As the comprehensiveness of registration of deaths of blacks varies widely throughout the country, this series of reports is not compatible with the earlier series for blacks.

In 1985 a new numbering series was adopted for statistical reports. The series (03-09-01) covers whites, coloureds and Asians.\textsuperscript{11,12} and series (03-10-01)\textsuperscript{13,14} covers blacks. The different reports in the series are now distinguished by the year of publication, not by a change in the last two digits of the report number.

With the repeal of the Population Registration Act and other apartheid legislation in 1991 the form of reporting of mortality in official statistics changed, beginning with data collected in that year.

The report series (03-10-01) was discontinued and series (03-09-01) became 'recorded deaths' which included all deaths registered in South Africa but without a racial classification.\textsuperscript{15,16} In the strict legal sense, the reports cover South Africa only. The exception is the coverage of South West Africa mentioned above. Deaths in Walvis Bay have been included in South African mortality data since 1978.

After the 'independence' of Transkei, Bophuthatswana, Ciskei and Venda, deaths in these areas were being excluded from South African mortality data. No geographical tabulation of deaths by age or cause has been given in official reports, although the total number of deaths according to magisterial district has been recorded.

From 1988 onwards, analyses of these reports was done by computer. A computer tape was produced which, inter alia, contained detailed data (in single years), sex, race, date of death and place of residence, place of death and cause of death (single full ICD code) for each deceased. The Central Statistical Services have not retained all these tapes but the Department of Community Health at UCT and the Medical Research Council have together managed to assemble a full set. These are held at both institutions and are in active use. There are as yet no plans to ensure their long-term archival survival.

Deaths of military personnel during the two world wars are recorded elsewhere.\textsuperscript{17,18}
Bodysurfing injuries of the spinal cord

A. T. Scher

In a group of 104 patients paralysed as a result of injury while swimming or diving, 3 patients were identified in whom the injury was sustained during bodysurfing. The mechanism of the injury and the clinical and radiological findings in this group differ markedly from the findings in the 101 patients paralysed after diving into shallow water. The 3 patients were significantly older with a mean age of 46 years. No fracture or dislocation of the cervical spine was present, but evidence of osteo-arthritis was present in all cases. The pattern of spinal cord injury was that of incomplete paralysis consistent with the central cord syndrome. This combination of findings suggests that the mechanism of injury was forced hyperextension of the head and neck due to the surfers having been caught up in turbulent wave action and driven into the sandy sea bottom.

In two previous analyses of patients paralysed as a result of diving injuries to the cervical spinal cord, a small, distinct, sub-group of older patients who had sustained spinal cord injuries while bodysurfing was identified. The circumstances and consequences of injury in this small group of patients differ in several significant respects from those of patients paralysed as a result of diving into shallow water. There is only one other report in the literature of cervical spinal cord injury caused by bodysurfing and an analysis of this group has therefore been made in order to define further the mechanism of injury, orthopaedic injury, neurological deficit and preventive measures.

Analysis of clinical and radiological findings

Out of a total of 104 patients paralysed as a result of water-related accidents, 3 were identified who had sustained their spinal cord injury while surfing in the waves, and not while diving into shallow water. The ages of the 3 patients were 42, 44 and 52 years, the mean age being 46 years. All 3 provided similar histories of having been caught up in turbulent wave action and driven into the sandy bottom. All 3 had sustained neurological injury with incomplete paralysis consistent with central spinal damage. None had sustained any fracture or dislocation, but all 3 showed evidence of osteo-arthritic changes in the cervical spine. None had consumed alcohol prior to entering the sea.