

DEPARTMENT OF HEALTH RESEARCH BRIEF

Verbal Autopsy with Participatory Action Research (VAPAR) Expanding the evidence base through partnerships for action on health equity
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Circumstances of mortality categories (COMCAT): a practical tool for health managers and planners

- The COMCATs concept is primarily aimed at health service managers and planners who need to be able to monitor population health as comprehensively as possible, using standardised methods. While cause-specific mortality has long been a basic tool for this purpose, there are a number of fundamental drivers and influences which can remain hidden within conventional mortality statistics. For example, a woman who dies after major bleeding around delivery is likely to be represented in cause-specific mortality statistics as a case of obstetric haemorrhage, but that does not differentiate between a woman who dies in a home delivery because she had no means of reaching a facility, compared to a woman who went to a facility but for some reason could not be effectively treated. Differentiating between such scenarios is extremely important for planning and evaluating health services and reducing avoidable mortality.
 - For managers at provincial/regional or national levels, being able to have basic information such as that shown here in Figures 1 and 2, showing current details and trends for the population for which they are responsible, would be invaluable, particularly for encouraging recognition and response to both challenges and successes in service organisation and delivery. From the CSMFs, trends in total mortality and its major cause of death components can be seen very easily. In this demonstration dataset, successful reduction of under-5 mortality and reducing components of mortality associated with:
 - HIV/AIDS are clearly evident. At the same time, the proportion of COMCATs due to difficulties with accessing effective health services are not reducing markedly over the 5-year period, which represents a challenge to health authorities. For deaths under 20 years of age, there are also relatively high proportions of the emergency COMCAT. While this may partly reflect risk-related activities among younger people, it is also a matter for concern in this community where free paramedic and ambulance services are not available on a 24-h, 7-day basis. Conversely, if a free emergency service were to be implemented, VA with COMCATs would be a good means of evaluating its effectiveness.
- Main findings**
- High HIV-driven burden of infection and increasing non-communicable disease mortality.
 - 36.2% infections (of which 19.9% was HIV/AIDS and tuberculosis), 10.9% cancer, 14.1% cardiovascular, 11.4% other non-communicable disease (total non-communicable diseases 36.4%), 8.1% injuries, 4.0% pregnancy and neonatal and 15.2% indeterminate.
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- Lack of resources to access health care, poor recognition of diseases and inadequate health systems responses ranked highest. 1.8% traditions, 16.6% emergencies, 17.9% recognition, 20.9% resources, 19.8% health systems, 17.5% inevitability and 5.5% multiple categories.
 - Improvements in recognition.
 - Constraints arising from traditional beliefs were not found frequently in this population – although traditional beliefs about health are common in this population, they are often acted upon in parallel with care-seeking from the health services.
 - it may not be the case, although possibly assumed, that traditional therapies are sought at and around the time of death.
 - substantial reduction in mortality for the under-5 years age group, largely driven by reductions in neonatal and infectious causes of death.
 - reductions in constraints of recognition and resources in COMCATs, while the emergency and health systems COMCATs did not change: may reflect a continuing lack of access to the 24-h, 7-day health services needed for effective paediatric care.
 - important gains may have occurred in health information and messages being provided to parents as well as a reduction of financial barriers, both of which reflected by reductions in challenges related to recognition and resources, respectively.



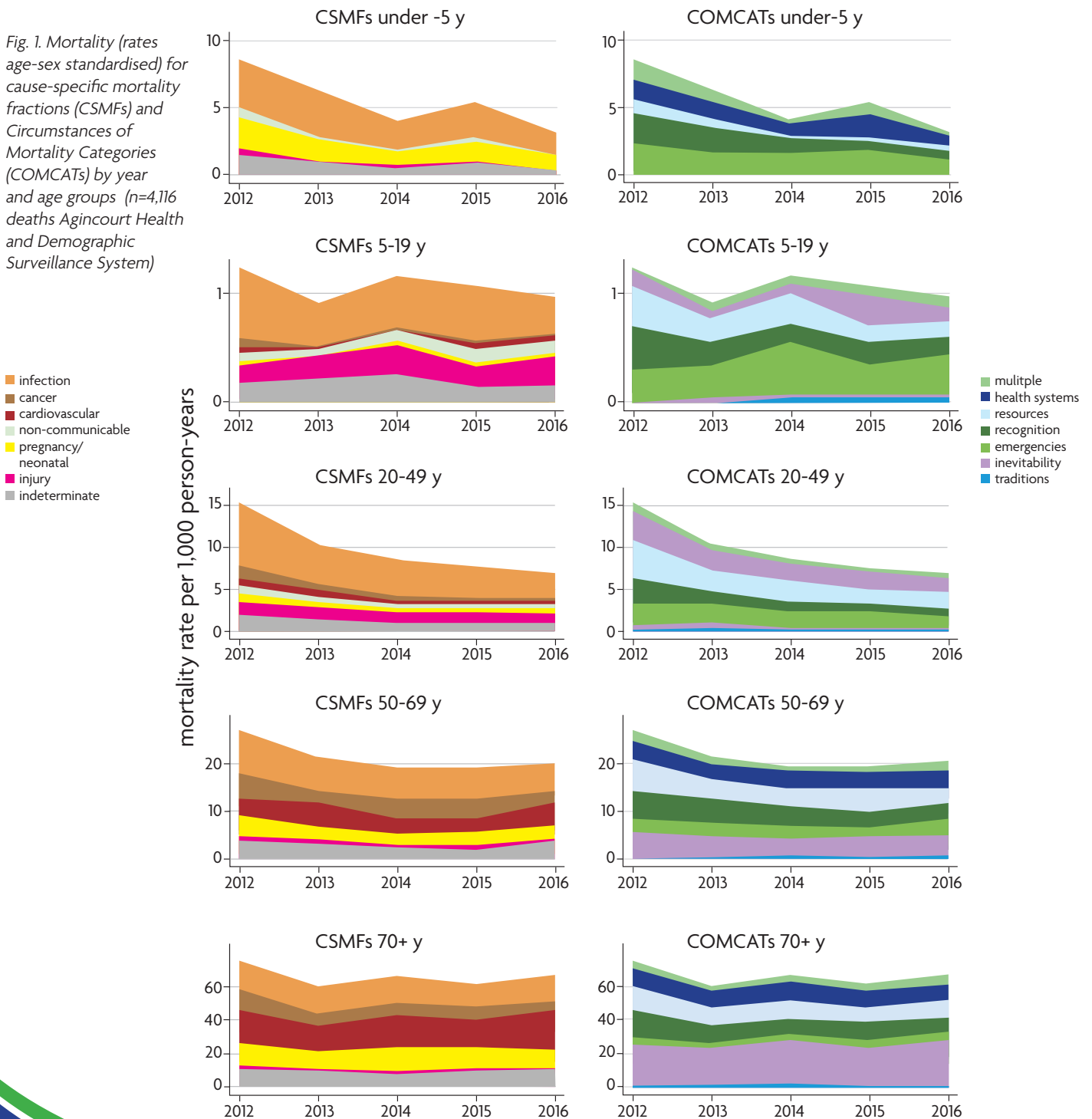
- 5–19 years age group, despite the expected much lower overall mortality rates, there was the highest proportion of any age group for injury mortality, and for the COMCATs, the highest proportion of deaths characterised by emergency situations.

- significant but reducing HIV/AIDS-related mortality, while at the same time non-communicable disease was accounting for an increasing proportion of overall mortality, possibly reflecting increasing rates of obesity and other

risk factors that are a concern for the future

- people, the 50–69 years a - reductions in recognition and resource constraints.

Fig. 1. Mortality (rates age-sex standardised) for cause-specific mortality fractions (CSMFs) and Circumstances of Mortality Categories (COMCATs) by year and age groups (n=4,116 deaths Agincourt Health and Demographic Surveillance System)





COMCATs

Cause categories	Traditions	Emergencies	Recognition	Resources	Health Systems	Inevitability	Multiple
HIV/AIDS & tuberculosis	7	6	3	2	1	4	5
Other infections	7	4	1	3	2	5	6
Cancer	7	6	2	1	4	3	5
Cardiovascular disease	7	2	5	4	3	1	6
Other non-communicable	7	5	4	2	1	3	6
Injuries		1		3	5	2	4
Pregnancy and neonatal	5	2	6	4	1	7	3
Interdeterminate	7	1	6	2	5	3	4
All causes	7	5	3	1	2	4	6

Fig. 2. COMCATs (rank order) within major cause of death category, (n=4,116 Agincourt Health and Demographic Surveillance System)

Table 1: Circumstances Of Mortality Categories (COMCATs)

COMCATs	Description
Traditions	Traditional practices or beliefs influenced health seeking behaviour and the pathway to death
Emergencies	Sudden, urgent or unexpected conditions leading to death, which probably precluded life-saving actions
Recognition	Lack of recognition or awareness of serious disease (e.g. symptoms or severity) negatively influenced health seeking behaviour
Resources	Inability to mobilise and use resources (e.g. material, transport, financial) hindered access to health care
Health Systems	Problems in getting health care despite accessing health facilities (e.g. related to admissions, treatments and medications)
Inevitability	Death occurred in circumstances that could not reasonably have been averted (e.g. very elderly or recognised terminal conditions)
Multiple	A combination of the above categories affected the pathway to death; no single factor predominated

Source: Hussain-Alkhateeb L, D'Ambruoso L, Tollman S, Kahn K, Van Der Merwe M, Twine R, Schiöler L, Petzold M & Byass P. Enhancing the value of mortality data for health systems: adding Circumstances Of Mortality Categories (COMCATs) to deaths investigated by verbal autopsy Global Health Action 2019:1. Available at: <https://www.tandfonline.com/doi/full/10.1080/16549716.2019.1680068>

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