Careful planning required for the transition to electronic cause of death registration

The surge in foodborne illnesses linked to pesticide poisoning in September 2024, including 890 foodborne illness incidents nationally and 22 child deaths in Soweto, is the latest in a series of events that highlight shortcomings in South Africa (SA)'s current civil registration and vital statistics (CRVS) system in providing timely cause-of-death (CoD) information. The HIV epidemic in the early 2000s and the SARS-CoV-2 pandemic in 2020 and 2021 are two prominent examples, where the country's vital statistics have failed to provide robust and timely data that could be used for public health actions. The problem stems from current death registration being a paper-based system, which suffers from a substantial reporting lag in causes of death, and no access to identified CoD information for the National Department of Health (NDoH) to enable a public health response.

In November 2024, SA's Cabinet announced a number of emergency measures to respond to the poisonings, including that the NDoH would establish an electronic system for medical certification of death to provide immediate access to CoD information. This development is an important opportunity for SA to redesign and modernise the death registration process, but the design needs to draw on the country's collective experience and expertise to ensure that an optimal solution is developed to meet the needs of all stakeholders in the death registration process.

Researchers from the SA Medical Research Council (SAMRC), a major user of CoD statistics, have investigated the area of strengthening CRVS, electronic death registration systems (eDRS) and electronic certification of the CoD (eMCCD). We conducted a scoping study to understand the current landscape related to death registration, and draw lessons from international experiences of electronic death registration.[1]

We already know that SA has a well-established CRVS system, and that there have been notable improvements in the registration of births and deaths since 1994, but also that there are major deficiencies in the quality of medical certification and the timeliness of access to CoD information for public health actions.[2]

A policy brief prepared for policy-makers in March 2024 has already recommended that, beyond the digitisation of death registration, the NDoH needs to engage fully in the revision of the CRVS process.[3] In particular, the department needs to lead the quality assurance process, and critically, it needs timely access to the data to inform public health actions, including CoD data for monitoring and evaluating health programmes. This requires support for the training of doctors in medical certification of CoD, and ensuring that it becomes part of the medical curriculum, professional training and in-service continuing education. In addition, a national high-level CRVS committee should be established to oversee business process improvements and ensure co-ordination across government.

We recognise that failure to address the current challenges and implement a digital system will leave SA unable to use CoD information to respond to epidemics, foreshadowing the recent tragic experience with child poisonings. While it is commendable that Cabinet has prioritised the development of eMCCD, it is also critical that the development of eMCCD is aligned with the modernisation of the death registration system. As time is of the essence, we consider that working on the whole CRVS system with all stakeholders, regardless of the model selected for eMCCD, will be essential to resolve the current challenges. On request from the DoH, we have consolidated the information and evidence that we have gathered from several projects (appendix), and have made four recommendations for the role-players in CRVS to consider.

Recommendation 1

Establish a high-level steering committee immediately to oversee strengthening the CRVS system via an eDRS.

Recommendation 2

Ensure that development and design of the eDRS considers:

(*i*) the reporting requirements of each institution interfacing with the eMCCD, for example:
- sharing data with local health services, or death audit systems
- including trigger/link to other reporting systems such as notifiable medical conditions.

(*ii*) the user experience and requirements:
- data should be captured once at source to avoid overload of frontline staff
- feedback loops should be provided to users to enhance quality and data use.

(*iii*) coding and analysis requirements:
- international guidelines for mortality coding and selection of underlying cause of death must be followed to ensure comparability of data[5]
- tools need to be developed alongside the digital solution to facilitate the use of data
- support with mortality data analysis may be required.

Recommendation 3

Ensure that any 'emergency solution' does not bypass key processes for successful digital development. The interface of any new system with current 'as-is' CRVS business process maps should be carefully defined and its impacts measured.

Recommendation 4

Adress major quality concerns for source data alongside the technical solutions outlined above, including:

(*i*) provide checks and prompts built into eMCCD and downloadable guidance/flyers to remind/guide certifiers

(*ii*) prioritise training for medical certification of CoD, ideally coupled with Health Professions Council of SA registration requirements and inclusion in medical curricula

(*iii*) establish quality assurance processes within provincial health departments to facilitate feedback to medical certifiers.

The health department is to be applauded for recent efforts to improve CoD reporting through, *inter alia*, a mortality surveillance engagement with all CRVS partner organisations, and proposed development of a CoD app to be integrated into the District Health Information System (DHIS). However, it is also imperative that any changes to existing systems are carefully monitored and managed so as to minimise disruption.

Within the mandate of the SAMRC[4] to promote the improvement of the health and quality of life of the population of the republic through research, development and technology transfer, and to perform such functions as may be assigned to the SAMRC by the

Minister of Health, the SAMRC remains committed to assisting government in improving the collection and use of CoD information.

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