Improving Mortality Statistics in Africa – Technical Strategy 2015 – 2020

Ministerial Statement: Third Conference of African Ministers responsible for Civil Registration

Republic of Côte d'Ivoire, 12 and 13 February 2015

....*Recognizing* that the Ebola epidemic has shown that the need for death registration and real time cause-of-death information is no longer optional but critical;

....*Realizing* the centrality of civil registration based vital statistics in providing data to inform health, economic and social policies, for good governance and accountability, and in advancing the data revolution;

....*Appreciating* the increased and continuing involvement of the African Ministers of Health in improving registration of births and deaths, including the collection of information on cause-of-death;

....*Underscoring* the important role of the health sector in the delivery of civil registration services to ensure a coordinated and integrated approach in addressing the challenges of improving CRVS systems in Africa;

....Call upon WHO, in collaboration with Pan African Organizations and other partners, to intensify their efforts in developing real time death registration and causes of death information systems at country level.

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Executive summary

Mortality and cause of death statistics are primary requirements for the management of national health programmes, including defining immediate interventions for disease outbreaks and epidemics. In most African countries, mortality statistics systems are weak, often characterized by fragmented and uncoordinated collections from multiple sources. As a result, African countries lack continuous, permanent and universal sources of mortality data, and thereby face considerable challenges in developing health interventions and building health systems, measuring and monitoring mortality, and in reporting against national and global development mortality goals and targets, such as those set by the Millennium Development Goals.

The evidence of this weakness was visible in the lack of available real time mortality data in the Ebola outbreak experienced in Western Africa. During its third conference held in Côte d'Ivoire in February 2015, the African Ministers responsible for Civil Registration took note of the situation and called upon the World Health Organization (WHO) and its pan-African partners to take urgent steps to support African States in establishing real time death registration and cause of death information systems.

The five-year strategy is developed to directly deal with this ministerial call for action. The overarching objective is to make readily available continuous, harmonized, quality mortality and cause of death data and statistics for African countries, guiding the development of better planned, designed and integrated mortality systems.

Vision: The vision is to record all deaths in Africa, to provide essential information to shape resilient health systems for healthy African lives.

Aim: The aim is for at least 20 African countries to record continuous data on all deaths by age, sex, location and cause of death, and improve mortality statistics through better planned, designed and integrated mortality statistics systems.

Goals: Drawing on the WHO targets for universal civil registration of births and deaths, including causes of death, the aspirational goals for this strategy are to have significant improvements in their reporting by 2020, such that:

- 60 per cent of deaths in a given year are continuously notified, registered and certified with key characteristics.

- 80 per cent of deaths in hospitals have causes of death reliably determined and officially certified in real time.

- 50 per cent of deaths in communities have probable cause of death determined in real time, and collection systems designed in a representative way[1].

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[1] This is not to indicate that only 20 African countries will benefit from this strategy. However, recognizing that many countries are at different stages of development of mortality statistics, many other countries are also expected to make significant improvements.

Framework for achieving results

To achieve these goals, health information and statistical systems must be able to bring together mortality data from multiple sources, including mortality data from health facilities, mortality surveillance, deaths occurring in the community; and administrative data.

Recognizing that each country's approach will depend on context, the strategy proposes "building blocks", which can be used to develop improved systems. The key building blocks to support the strategy are:

- **African countries take action for better designed mortality statistics systems**, including: developing a baseline report on mortality collection at the national level; reviewing the civil registration and vital statistics (CRVS) comprehensive assessment; creating a mortality statistics technical working group; and developing a national, costed plan for improvement of mortality statistics, linked to the improvement plan for CRVS.

- **Partners focus on**:

  - Developing expertise and capacity in country, and at regional level
  - Developing better norms, standards and guidance
  - Investing in scaled and integrated technical projects

- **Partners and countries create knowledge development and sharing.**

Recent achievements

In the context of the Ministers' call for action, a regional reference mortality group was formed in August 2015, to consider how best to position mortality statistics development within the Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics (APAI-CRVS).

The group agreed to take immediate actions to move the agenda forward. For 2015, the actions taken were:

- Developing a five-year strategy for improving mortality statistics in the CRVS context in Africa (this document).

- Sponsoring regional expertise through a workshop and consultation on mortality statistics design held in Cairo in September 2015, funded by the Economic Commission for Africa (ECA) and WHO.

- Presenting the strategy for discussion and endorsement at the African Symposium on Statistical Development in November 2015 in Gabon, inviting attendance from health representatives.

- Hosting a donor coordination meeting in Africa to support the improvement of mortality statistics and CRVS systems in Africa, held in late 2015.

Part I: Context

A.   Political imperative for improved mortality statistics

African countries, and regional and global development partners, recognize that mortality statistics improvement in Africa is critical to future health development. The Sustainable Development Goals focus attention on the need for overall and cause-specific mortality data. The recent Ebola outbreak demonstrates the need for real time mortality data to be in place in all countries.

Partners, including WHO, ECA and the African Symposium on Statistical Development have been considering better ways to promote integrated mortality statistics development under the APAI-CRVS strategy. In February 2015, the African Ministers responsible for Civil Registration, including many African Ministers of Health, made a declaration (Yamoussoukro Declaration) recognizing the critical need for real time mortality data in African countries (ECA, 2015a), especially in the aftermath of the Ebola outbreak. The Declaration specifically called on WHO in conjunction with its pan-African partners to intensify this effort in developing mortality data at country level. Health Ministers in Africa, including those in the WHO Eastern Mediterranean Regional Office (EMRO) region, have also specifically committed themselves to the improvement of CRVS systems and mortality data, as a priority (WHO EMRO, 2013) (WHO AFRO, 2015).

A response strategy has been developed, and informed by the sequential work of partners in Africa, especially those involved in CRVS development, for instance:

- **The Africa Civil Registration and Vital Statistics Core Group**,[2] at a meeting held in Zimbabwe in June 2015, agreed to develop a Five-year Regional Strategy for Improving Mortality Statistics in Africa; supported by an African partnership focussed on improving mortality data.

- A **regional reference group**[3] was formed in August 2015 to consider how best to position mortality statistics within the APAI-CRVS. The group identified that the challenges were many, but also agreed that the opportunities were plentiful. The opportunity for new thinking in this area – methodological, analytical, and developmental – is exciting. Africa houses significant technical expertise, along with extensive practical implementation experiences. It also hosts strong technical institutions and partnerships, backed politically, through APAI-CRVS.

- An **interregional workshop** held in Cairo, September 2015, explored better integrated approaches to statistical development – drawing on the experiences of experts from Africa and the Middle East, across a wide variety of mortality data

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[2] The Africa Civil Registration and Vital Statistics Core Group is composed of: the African Union Commission, the African Development Bank, the secretariat of the African Symposium on Statistical Development – representing member States, the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), WHO, the United Nations High Commissioner for Refugees, Plan International, and the International Network of field sites with continuous Demographic Evaluation of Populations and their Health (INDEPTH) Network.

[3] Led by the African Symposium on Statistical Development, WHO and ECA, and comprising representatives of the African Union, the African Development Bank, UNFPA, the World Bank, the Global Fund, INDEPTH Network, Paris 21, and Bloomberg Philanthropies.

collection experiences. The group agreed that there was an urgent need to improve the guidance and implementation of better designed mortality statistics systems.

B.   Evolution of mortality statistics in Africa

Viewed from an evolutionary perspective, statistical developments for mortality data collection have been made over time to improve knowledge about mortality – a period of statistical advancement which is still underway. In Africa, countries have multiple and varying mortality data collection systems, which generally contain elements of the following collection approaches:

Health facility collections	The "gold standard" in mortality statistics is to have all **deaths in health facilities** registered, medically certified and coded using the International Classification of Disease (ICD), the system promoted as part of the recent movement to develop fully functioning CRVS systems. The benefit of this type of system is that mortality data are collected and analysed continuously (real time, daily in a functioning system) and can be disaggregated by age, sex, cause of death, and geography. The system relies on cause of death information, which is determined by physicians or other health workers, occurring in hospitals or health settings. A few countries in Africa produce national mortality data this way, including Cabo Verde, Egypt, Mauritius, Seychelles, and South Africa. Some countries, including Ghana, Mozambique, the United Republic of Tanzania, the Sudan and Zambia, can produce national mortality data for **hospital deaths**. In many African countries, data about deaths in health facilities may not be nationally representative at the population level. Nonetheless, the medical certification and coding of deaths and compilation of facility mortality statistics provide valuable benefits, including an improved quality of care in facilities and the availability of continuous real time data from health facilities to inform national health planning and policy.
Periodic data collections	**Periodic data collections**, such as household surveys and population censuses, have been used in many countries to produce estimates of mortality. From the perspective of mortality statistics, the benefit of these collections is that they are designed for representativeness: the challenge is that detailed and disaggregated mortality statistics can be difficult to collect using these instruments. The census is often used to estimate fertility and mortality using both direct and indirect methods. When direct methods are used to identify recent deaths in the household, it is possible to add a follow-on verbal autopsy study to estimate cause specific mortality fractions at national level. Some 45 countries in Africa[4] have conducted three or more household surveys – either Demographic Health Surveys or Multiple Indicator Cluster

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[4] These countries include Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Côte d'Ivoire, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali,

	Surveys – between 1990 and 2013 (Demographic Health Surveys, 2015). However, in Africa and other regions, significant disparities remain across countries, with many countries still unable to sustain a long-term programme of quality surveys (Statistical Commission, Economic and Social Council, 2014).
Health and demographic surveillance	In many African countries, **health and demographic surveillance sites** have been established, often funded for the purpose of research and testing of interventions. As part of the activities of these sites, all vital events in a specified area may be tracked through active case finding (visits to households) in order to track births and deaths as well as other demographic information such as migration. The sites are valuable sources of fertility and mortality data, especially localized data on community deaths. Cause of death information is generated by the application of verbal autopsy techniques, in households where a death is identified. Surveillance sites, such as those included in the INDEPTH Network, are active in many countries including Burkina Faso, Côte d'Ivoire, Ethiopia, the Gambia, Ghana, Kenya, Malawi and Senegal. However, the challenge remains that these sites are not representative of the country population as a whole – most are established in rural areas. In the absence of an explicit design for representativeness, nationally representative demographic statistics cannot be produced (World Health Organization, 2014a).
Sample systems (with verbal autopsy)	**Sample systems** (also known as sample systems with verbal autopsy or SAVVY) are designed to collect nationally representative fertility and mortality data. These systems involve active case finding and enumeration of vital events in nationally representative sample areas. The value of sample registration with verbal autopsy is that the collection can provide both local and population based statistics on fertility, mortality and causes of death. Malawi and the United Republic of Tanzania, among others, have such systems for producing mortality data; and Zambia is implementing a sample registration system linked to its CRVS system to improve the reporting and registration of births and deaths. The challenge is that the system is often not integrated with other collection systems for greater benefit and power – for example, CRVS systems.
Other (multiple) mortality collections	In addition, many countries in Africa have other **mortality data collections**. These can include administrative data collection (road traffic accidents, police or coroner data) and other health collections (maternal death audits, mortuary collections, disease-specific collections). Mozambique, for example, have identified multiple mortality collections in its country, including collections for maternal and neonatal deaths, fatal injury surveillance, other epidemiological surveillance for notifiable diseases, including malaria, TB and HIV collections, in addition to its hospital

Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, the Sudan, Swaziland, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

	mortality data collection. The challenge for mortality statistics development is how these systems can best be integrated to improve statistical power and analysis, and reduce duplication (ibid).

C. Contemporary data needs

Era of the Sustainable Development Goals

A large number of health targets in the Sustainable Development Goals call for the availability of data on all-cause and cause-specific mortality. These goals represent a significant increase in demand for mortality data than was the case for the Millennium Development Goals. An integrated and better designed mortality statistics in the context of CRVS should inform and monitor the Sustainable Development Goals' progress, including universal health coverage in a more efficient fashion than further fragmentation of collection.

However, the number of targets related to specific health conditions in the Sustainable Development Goals presents a greater risk for multiplication and further fragmentation of the present systems to meet the Sustainable Development Goals data demand at global and national levels.

D. Resilient health systems: three d ata lessons from the Ebola crisis

As of 29 November 2015, a total of 28,637 Ebola cases (including 11,315 deaths) had been reported from six West African countries – Guinea, Liberia, Mali, Nigeria, Senegal and Sierra Leone (WHO, 2015a).

"Strategies are needed to collect and disseminate reliable data. The actual epidemiological scale of Ebola cannot be measured with precision …. The lack of real-time data on the number of deaths by location and the causes of death has seriously affected interventions tracking the infection and promoting preventive and curative measures. Health interventions depend on continuous gathering of basic data on mortality by age, sex, location and cause of death, including through functional civil registration systems. ...Urgent steps should be taken to strengthen the statistical systems of the three countries, including reopening and strengthening their civil registration systems. Similar measures should be taken in non-affected African countries with weak statistical and civil registration systems."

(ECA, 2015b, p. 48)

The mortality data deficiencies from the Ebola outbreak were very clear. An ECA report released in January 2015 noted that each of the affected countries had public health systems which did not have the basic tools to collect or update data. The report strongly advocated for improved data systems.

A report released by the Report of the Ebola Interim Assessment Panel in 2015 found that member States had largely failed to implement the core capacities required under the International Health Regulations (2005) for surveillance and data collection (WHO, 2015b, para. 14), noting:

In the Ebola crisis, integrated standards for data collection were needed in all the countries affected. The Panel found that data were not aggregated, analysed or shared in a timely manner and in some cases not at all. The Panel also noted that better information was needed to understand best practices in clinical management.

Innovations in data collection should be introduced, including geospatial mapping, health communications, and platforms for self-monitoring and reporting.

For mortality statistics development, there are three immediate lessons and imperatives:

The first lesson is that many African countries are likely to be in similar positions of lack of mortality data. The World Bank and WHO highlighted in 2014 the global deficiencies in national data on causes of death, particularly for many African countries (see map). This means, many may face similar challenges in collecting real time and accurate data in a situation of health emergency (World Bank-WHO, 2014).

The second lesson is that a strong health information system and national statistics system, with established information flows and the ability to monitor the basic and key indicators at an individual and aggregate level are essential building blocks for resilient health systems. A 2015 article in the *Lancet* noted that resilient health systems are strong by virtue of the information they collect…. and by implication, health systems are weaker when there is lack of data:

QUALITY OF CAUSE-OF-DEATH STATISTICS, 2012

First, resilient health systems are aware…Awareness needs strategic health information systems and epidemiological surveillance networks that can report on both the status of the system and impending health threats in real time, allowing predictive modelling. Information can come from traditional (facilities, audits, surveillance, population surveys), and less traditional sources (social media, health worker call line, satisfaction surveys). This information should in turn inform planning, including tabletop exercises to simulate the logistics of a response to crisis (Kruk, and others, 2015, pp. 1910–1912).

The third data lesson is that work must start now to design better mortality statistics systems. ECA, the African Symposium on Statistical Development, WHO and many other African partners, have been working on improvement of CRVS and mortality data for a considerable time. These efforts have led to a growing body of experiences and lessons learned from countries of hospital and cause of death data strengthening in many countries (Botswana, Cabo Verde, Egypt, Ghana, Kenya, Mauritius, Mozambique, Seychelles, South Africa, the United Republic of Tanzania and Zambia, among others). In addition, recent investment approaches, such as those for the Global Financing Facility in support of Every Woman, Every Child have highlighted the approaches needed to finance integrated improvements.

There is more to be done. This strategy is designed to provide a framework for the longer term approaches required.

Part II: Designing better mortality statistics systems

A.   Design approach: promoting amalgamation

> **Modern data collection is imperative.**

It is clear that there has been significant evolution in mortality statistics collection. Largely, this evolution has been driven by the need for better coverage, specificity and disaggregation. This is a critical challenge for mortality collection: the collection has demands placed on it for both aggregated and disaggregated collection, for highly specified and detailed causes of death, stratified by age and sex.

Arguably in a future system, amalgamated approaches are needed:

- Evidence tells us that mortality collection, like many economic data collections, must rely on multiple credible sources for good reporting. This means that attention must be paid to practical issues, including how to understand, amalgamate and analyse incomplete systems. The key is to ensure that multiple systems do not overlap and create confusion. The key to national level statistics is completeness and representativeness. The methodological question is how they are integrated into a system.

- The statistical development aim for this strategy is to bring together data from these various data collection efforts to produce better national mortality data, rather than continue to provide disparate and disconnected information. The amalgamation of these collections is not only of paramount benefit to the completeness of national mortality statistics; but also presents significant advantages in terms of cost-effectiveness and optimal utilization of national resources.

Many of the functioning systems that produce national mortality data amalgamate various sources. They rely on integrating multiple sources into a coherent and routine system, and pay attention to improvement in collection, analysis of incompleteness, and identifying gaps where better information can be developed – for example:

- More than half of national mortality data provided to WHO come from national statistics offices and includes data from registries, hospital systems and other sources such as coroner offices, burial or funeral records, and police records (WHO EMRO, 2013). These systems can be viewed as not a single collection, but a system of collections coming together optimally, accounting for methodological differences and areas of duplication. This requires effort, design and maintenance.

- Mortality data from South Africa, for instance, rely on multiple sources, including the Department of Home Affairs, which in turn is completed by medical practitioners. In addition, basic mortality data can be collected from a chief or tribal leader where a medical practitioner has not certified a death (Statistics South Africa, 2014).

B. Building a platform: mapping and linking to civil registration and vital statistics

> **CRVS systems are seen as the natural platform for a 'gold standard' mortality statistics system.**

The foundation that CRVS systems can provide through recording all births, all deaths and all causes of death contributes not only to the development of national fact of death data, but allows collection of causes of death data, arguably using integration as the means to collect credible data from multiple sources (World Bank–WHO, 2014). The number of African countries committed to assessing and planning improvements in their CRVS systems represents an unprecedented opportunity for focussing attention on death and cause of death data improvement in Africa.

The statistical aim is a system that collects information on all deaths and causes of death, which amalgamates data sources such that each unique record contributes to a total understanding of causes of death in a country. Such a system will rely on good design and optimisation from multiple sources (ibid). To start, data can be analysed from multiple sources in order to extract any statistical or reporting value, but with a view also to understanding how these multiple collections can contribute to a national mortality statistics design.

C. Modern methodology

> **The technical strategy must incorporate modern, evidence-based methods, guidance and advice on successful strategies for improvement.**

There are many gaps in contemporary advice to countries on how to design and implement better mortality statistics systems.

The collection of fact of death and cause of death in this way requires careful attention to modern data needs:

- **Coverage**: A basic requirement for a well-functioning mortality system is that the collections and the statistics derived should cover the total geographical area of the country and every population group of the country. Coverage in most African countries is often lacking in information about non-institutional deaths. In most instances, there are no defined or institutionalized mechanisms for handling such collections.

- **Completeness:**[5] Complete collection is achieved when every death occurring to the population and its corresponding cause is registered within the specified time along with key characteristics of the event, including age and sex of the decedent, place of death, residence etc. Completeness is especially critical for cause of death reporting, whether the cause is underlying cause (as described by medical certification) or probable cause (as collected through verbal autopsy). Where collecting cause of death from records which are administrative, new ascribing methods may be needed.

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[5] Additional information on complete registration is available from
http://unstats.un.org/unsd/demographic/standmeth/principles/M19Rev3en.pdf . Para. 576.

- **Quality:** Death and causes of death statistics from different sources need to be of the good quality to serve as the basis for better decision-making. Producers of these statistics should aim to maximize completeness, correctness, availability and timeliness. In this regard, quality assurance should be embedded in each operational stage of the collections and statistical production processes.

Security, privacy and confidentiality: While not necessarily a methodological issue, data linkage can considerably improve the design and integration of data systems. It is essential that there be a system in place for protecting the privacy and confidentiality of the information on mortality records and in associated statistical reports. Security and confidentiality are two critical elements of consideration in systems which integrate records from multiple sources. Operational guidance is required.

Representativeness: A critical methodological question is how careful integration and counting of deaths and causes of death can contribute to a system representative of the whole population and relevant subpopulations. More work remains to be done.

D.   Using the strength of partnerships

Current partnerships in Africa will be critical to actual improvement of mortality data in countries.

Many countries have multiple partners with interests in mortality data, who often work in isolation from national data systems, with the result that mortality data from different sources are not linked or sustainable over the longer term.

A better coordinated approach can help improve the availability and quality of mortality statistics and respond more effectively to national health information, planning and monitoring needs. This will also support better performance of the CRVS system.

Strong partnerships in Africa, that already support the APAI-CRVS[6] process, can support better mortality statistical development. These partnerships include:

- WHO, ECA, the African Symposium on Statistical Development, UNICEF and other regional core group members in Africa.

- Country partners, including representatives of African national statistics offices, national health statisticians, and national civil registration representatives.

- African health partners driving mortality statistics development in Africa.

- Global and regional institutions with interests in contributing to improvements in country CRVS and mortality data.

Principles for partnerships should include agreement to coordinate mortality data projects that are already functioning, to the development of national data on mortality; and agreement to support building blocks in countries − including the CRVS national plan and implementation strategies, to guide mortality data projects and investments.

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[6] APAI-CRVA, Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics.

Part III: Technical strategy

The overarching objective of this strategy is to make readily available continuous harmonized, quality mortality and cause of death data and statistics for African countries through better planned, designed and integrated mortality systems.

Vision

The vision is to record all deaths in Africa, to provide essential information to shape resilient health systems for healthy African lives.

Aim

The aim is for at least 20 African countries to record continuous data on all deaths by age, sex, location and cause of death; and improve mortality statistics, through better planned, designed and integrated mortality statistics systems.

Goals

Drawing on the World Bank-WHO targets for universal civil registration of births and deaths, including causes of death, the aspirational goals for this strategy are to have significant improvements in their reporting by 2020, such that:

- 60 per cent of deaths in a given year are continuously notified, registered and certified with key characteristics.

- 80 per cent of deaths in hospitals have causes of death reliably determined and officially certified in real time.

- 50 per cent of deaths in communities have probable cause of death determined in real time, and collection systems designed in a representative way.[7]

The purpose of these goals is to ensure that reliable data are available and disseminated for real time and aggregated use at country, regional and global levels. The goals set are aspirational, yet achievable, and are in line with imperatives set by the African Ministers in the aftermath of the Ebola outbreak. Achieving them will, however, require significant attention to design, scale and technical support to African countries.

A.   Building blocks

Key building blocks for the strategy rely on country and partner focus and collaboration in five key areas.

Countries focus on:

- **Plans for designing mortality statistics systems** that are linked to national health sector plans, CRVS improvement plans, national strategies for the development of statistics, and other mortality data collection strategies.

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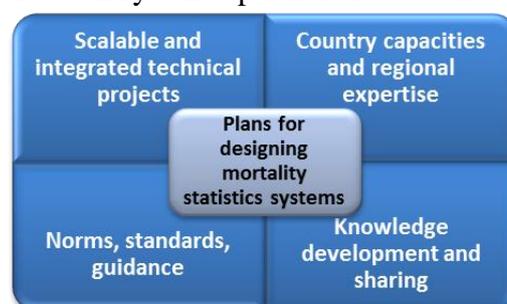
[7] This is not to indicate that only 20 African countries will benefit from this strategy. However, recognizing that many countries are at different stages of development of mortality statistics, many other countries are also expected to make significant improvements.

Countries and partners collaboratively focus on the following areas:

- **Develop country capacities and regional expertise** in various data collection strategies that can be deployed to meet African technical needs.

- **Support scalable and integrated technical projects** in African countries, and supported through regional mechanisms.

- **Identification norms, standards and guidance** relevant to contemporary African countries' needs.

- **Knowledge development and sharing**, including south-south learning.

These building blocks are detailed below, and suggested actions for each are contained in appendix 1.

1. Plans for designing mortality statistics systems

The Five-year strategy promotes three key elements to deal with improving mortality statistics in Africa:
- **Registering all deaths by age, sex and location**
- **Recording and registering hospital deaths with causes of death**
- **Representative and scalable design for identifying deaths and their causes at community level.**

Focussing on the three key elements will generate benefits for the system as a whole, and strengthen each collection individually. The emphasis is on linkage, counting and analytical methods, which can build representativeness over time from a complete and functioning system.

As the system develops, these multiple data sources could be assimilated over time, increasing coverage and completeness of the system. These data are also supplemented by periodic data available from census and surveys (e.g. coverage estimates).

To develop better statistical systems, countries will be encouraged to extend their CRVS work in four areas:

(a) **Developing a baseline report on mortality collection in the country**, which maps and analyses all mortality data collection activities within the country, including health, burial, funeral, mortuary, police, surveillance, sample systems and surveys, verbal autopsy data, death audit and other sources. The purpose of this report is to develop a better quality design which can work towards strengthening the three elements above, including:

(i) Improving notification processes for death registration, especially from health, burial and police records;

(ii) Improving health data collection for better understanding of causes of death;

(iii) Improving representativeness of community death statistics through better scalable design.

(b) **Reviewing or supplementing (or both) the CRVS comprehensive assessment with this broader perspective on current mortality data collection,** looking at potential strategies to improve death registration, hospital cause of death certification and coding, ascertainment of deaths and causes of deaths in the community, and integrating and linking multiple sources of data for better identification and registration of all deaths;

(c) **Developing a national, costed plan for improvement of mortality statistics**, as part of the CRVS programme, and incorporating the key elements of better design noted from the baseline report and the comprehensive assessment process. This should include developing systematic data linkages within a secure, confidential and ethically managed process;

(d) **Creating a mortality statistics technical working group** to support the baseline reporting, assessment and improvement strategies that are positioned as integral to CRVS improvement and that involves stakeholders from health, civil registries, statistics, surveillance and others.

This approach is fortified by a consistent regional programme of training, knowledge development and generation of supporting methodological guidance.

2. Develop country capacities and regional expertise

> **The Five-year Strategy supports the better development of country and regional technical expertise as the best investment in long-term system improvement.**

It is a fundamental misconception that Africa does not have expertise in developing mortality statistics systems. Networks such as INDEPTH,[8] and the success of many countries in producing national and hospital data on causes of death indicates there is capacity in Africa to support its own needs.

Technical expertise development to support the regional mortality statistics improvement comprises the following elements:

(a) **Country technical expertise:** Country technical expertise in mortality data collection, ICD[9] implementation, verbal autopsy, and health and demographic sentinel and sample surveillance is essential to better mortality collection development. Such expertise exists across many technical areas and countries. Comprehensive CRVS assessments can be supplemented by country review and scanning of mortality systems, generating a view of achievable improvements in integration that can be made. Future expertise in multiple collections methodologies, system design and national statistical approaches will help build better systems over the long term. Technical placements in country, similar to those used for census, and scaled based on need, are a critical means of ensuring focus on improvements and better design. National technical committees, for example, the Mortality Technical Working Group in Kenya, established under the national CRVS committee, help to focus attention on national statistical needs and development through vital statistics reporting and analysis;

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[8] INDEPTH, International Network of field sites with continuous Demographic Evaluation of Populations and their Health.

[9] ICD, International Classification of Diseases.

(b)   **Regional expertise**: Regional expertise is essential to ongoing country technical support. Technical support placed too far away from countries is neither accessible nor sustainable for immediate country support. It is envisaged that countries may request in-country technical support (similar to census support) or may alternately request sporadic support as needed. This expertise should be able to provide technical advice on all elements of design, including integration and analysis of multiple systems of reporting. The strategy includes a strong element of developing this regional expertise, recognizing that Africa already has many experts in different fields of mortality collection;

(c)   **Institutional capacity and collaboration**: Countries with national statistics offices, ministries of health, and national public health institutes, and also mortality networks such as INDEPTH, and development partners, working in strong collaboration to build and integrate systems, will achieve results for statistical development. The possibility for a dedicated health statistics position with authority to develop better collaboration and coordination across the various institutions and partners is an important element.

3.   Invest in scaled and integrated technical projects

> **The Five-year Strategy will promote investment in statistical development for projects that address scale and building of sustainable statistical systems in countries.**

Many countries already have multiple mortality data collections, including from household surveys, surveillance, health facilities and disease-specific programmes, many of which are not amalgamated with health or CRVS systems; nor are they scaled for representativeness for public health or statistical purposes. New technical projects – for example, automated approaches for verbal autopsy – are often trialled without provision for scale into a routine system. These projects do not serve long-term country statistical needs.

Demand for stand-alone data projects will likely continue as demand for mortality data exceeds immediate supply. The critical element will be how countries can harness this demand to support sustainable gains in integrated systems for mortality statistics. Technical coordination and scaling will be essential. Countries such as Uganda, with a limit on pilots forcing attention to scale for its CRVS system, will be instructive to how sustainable and scaled approaches can be achieved. The possibility for a dedicated health statistics position with authority to develop better collaboration and coordination across the various institutions and partners is again likely to be an essential element.

The opportunity to develop projects designed for scale and long-term strength must also be considered as part of this strategy. There are many opportunities. The five-year strategy will promote investment in projects that will achieve gains for better mortality recording against the following regional goals:

(a)   Improved health facility recording and classification of deaths by age, sex, location and cause at baseline and during monitoring;

(b)   Integration into national datasets of notifiable deaths (maternal, newborn, child deaths – and deaths from specific notifiable diseases);

(c)   Systemic approaches to recording and monitoring community deaths.

There is already evidence of critical projects which can be designed and scaled to support this development:

(a)   Projects designed to accelerate both death registration as well as improving causes of death, for example, hospital notification systems, surveillance systems, and sample systems such as those being developed in Zambia, are priorities for improving mortality statistics in countries;

(b)   The WHO District Health Information Software 2 (DHIS2) mortality data project (being implemented now in Ghana and the United Republic of Tanzania) will provide a module ready for countries to adopt and scale into their hospital systems, creating an electronic medical certification process, and allowing for a simplified or automated approach to be developed to deliver local and aggregate data needs;

(c)   Automated coding systems such as IRIS,[10] could be delivered and supported regionally to support country needs as hospital collections are built and scaled.

4.   Develop norms, standards and guidance

> **The Five-year Strategy supports development of practical and relevant norms, standards and guidance as necessary for long-term sustainable data systems.**

For mortality statistical development, there now exists a body of modern technical guidance for improving national mortality data in the CRVS[11] context.

For example, new guidance on building mortality statistics systems in the context of CRVS was released by WHO and partners in November 2014, which details possibilities for countries to improve their CRVS system collection of mortality data, using innovation, hospital data and drawing on multiple other sources of mortality information (WHO, 2014a). Also in 2014, a new verbal autopsy standard was released (WHO, 2014b), along with a simplified ICD-10 list was released, with the purpose to provide an interim step for countries seeking to improve mortality data in alignment with ICD standards (WHO, 2014c). This list is being programmed into the DHIS2 as a standard module, with the potential to be rolled out across many African countries as a core set of mortality data with benefits for health planning and CRVS systems.

Yet, there are gaps in guidance and technical advisory for countries implementing mortality statistics systems, particularly in developing new methodologies to build integrated and representative systems. Accordingly, any programme for standards, norms and technical implementation guidance must be strongly focussed on providing applied guidance that is relevant to a country's situation. For example, countries with strongly decentralized systems, or those just beginning to develop national mortality collections, may seek to use simplified or staged approaches.

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[10] IRIS, is an automatic system for coding multiple causes of death and for the selection of the underlying cause of death.

[11] CRVS, civil registration and vital statistics.

At the African Mortality Statistics Experts Workshop in September 2015 in Cairo, the African Symposium on Statistical Development, WHO and ECA all recognized that there were gaps in norms, standards and guidance, and recommended priority development in:

(a)   Design for mortality statistics as a system, focussed on improving death registration, hospital mortality data and community deaths data, and incorporating multiple elements in their design;

(b)   Review of comprehensive assessment tools and processes in light of contemporary knowledge of mortality statistics systems, including development of baseline reporting standards and procedures;

(c)   Methodological design and development work, prioritized to ensure that countries have clear guidelines in collection design, methodology, quality assurance processes, and tools to assess or improve data quality, and drawing on other in-hospital sources such as mortuary guidelines and maternal death audits;

(d)   Building linkages with civil registration systems as a priority through better notification of events, and using administrative and other sources of data, including health notifications, burial notifications and other records advising of a death;

(e)   Operational guidance for developing mortality data systems in hospitals, including review and standardization of health facility data collections;

(f)   Guidance on collecting data on community deaths;

(g)   Improved guidance on mortality data collections and statistics in situations of conflict or health emergency, drawing on interregional experiences with conflict and Ebola;

(h)   Guidance on analysis of data, including estimation of registration completeness, assessment of quality tools and development of reporting tools.

5.   Partners and countries support capacity development and knowledge sharing

> **The five-year Strategy will develop knowledge approaches which are sustainably delivered in Africa for the best long term benefit.**

Capacity and knowledge development are a critical aspect to the strategy. It is important that continuous training and support is made available in technical areas, including methodologies for surveillance, sampling, hospital collection, or in classification areas such as verbal autopsy, medical certification and coding, using ICD. A training strategy, run annually in Africa, is an essential part of the plan, and will be designed to cover language groups in the region. Innovative elements, including online and remote delivery, will be explored for their value in supporting continuous improvements in collection. Strong collaboration with institutions of academic training in Africa (especially those delivering training in demography, statistics, epidemiology and public health) will be critical in sustaining capacity development; and in the creation of a cadre of professionals with the required new orientation in running mortality systems in Africa. This training plan will be linked to the country strategy for development.

The continued development and sharing of knowledge and experience between countries in the region will help secure long-term gains, in the following ways:

(a)   Training programmes must be developed and run in Africa, lodged in sustainable institutional settings, and respond to contemporary African country need;

(b)   South-south cooperation, already evident between many countries, will help support momentum. Leadership by countries with already functioning systems will be critical;

(c)   The partnerships through ECA, the African Development Bank, the African Union Commission and the African Symposium on Statistical Development, will be critical to supporting knowledge sharing, and monitoring of gains for the region;

(d)   WHO Health Observatories should be explored for their potential role to record interim and long-term data gain, for the benefit of countries and partners in the region;

(e)   APAI-CRVS developments in knowledge sharing, and the recently created CRVS centre of excellence, will play important roles in knowledge sharing in the region, and with other regions.

Part IV: Financing the strategy

The reference group, supported by the attendance of the African Development Bank, the World Bank and the Global Fund, discussed financing the strategy in the context of developments in global funding for CRVS and the regional technical model needs.

The financing approach needs to incorporate the reality that there are already partnerships and funding to improve mortality data, opportunities through health and CRVS initiatives to improve data, and new opportunities to finance technical improvements in mortality statistics.

A.   Leveraging initiatives

There are opportunities to leverage the present initiatives, including:

- APAI-CRVS and Eastern Mediterranean regional CRVS programmes, which provide platforms from which much of the country work in developing baseline reports, establishing technical committees and reviewing comprehensive assessments can take place.

- Initiatives that build better mortality data (for example, those supported through the Global Fund and the World Bank's Global Financing Facility in support of Every Woman, Every Child processes) can draw on the use of assessment and baseline reporting to develop more integrated approaches. The Global Fund and the World Bank have been active partners in the development of this strategy.

With many initiatives already in place, it was agreed that developing the knowledge amongst partners of the integrated design approach was important, in order for cohesive investments to be made. Accordingly, ECA and the African Symposium on Statistical

Development agreed to call a regional donor coordination meeting before the symposium in September 2015.

B. Developing a financing strategy

However, it was noted that many initiatives do not support better regional development of essential statistical assets and infrastructure. It was agreed that the financing strategy should be developed, and should include:

- Better present regional architecture and its role in CRVS and mortality statistics development as viable options for technical support (including African training centres and technical networks).

- Mapping of donors in countries, including health data partners, with a focus on financial harmonization.

- Demonstration of the regional commitments already made, including:

  o Identification of current level of resourcing from regional partners, including ECA, to demonstrate strong regional commitments.

  o Identification of African Development Bank support now and into the future.

- Development of a perspective on catalytic funding, especially given the success of the Commission on Information and Accountability initiative and the Health Metrics Network funding in seeding technical developments.

- Discussing regional possibilities in the new funding opportunities (Global Financing Facility in support of Every Woman, Every Child, Centre of Excellence), and in the present funding sources, and positioning the CRVS and mortality statistics strategy in the financing discussion.

C. Monitoring

Monitoring of the regional strategy will be conducted at three levels:

- The ministerial level through the biennial conference of African Ministers responsible for Civil Registration

- The regional level as a component of APAI-CRVS

- The national level by countries implementing different component of the strategy

Development of appropriate evidence-based monitoring tools at the three levels of the monitoring and accountability framework is an important component of the strategy. The APAI-CRVS knowledge management portal (which is under development by ECA) will be used to provide baseline estimates for the identified indicators of study. The portal, which will be updated on a yearly basis by country focal points, will also ensure the flow of information on identified indicators on a continuous and sustainable basis. Progress reports against identified indicators will be used to report back to the ministerial forum, the Statistical

Commission for Africa, the African Symposium on Statistical Development and other relevant forums. Countries will be expected to develop appropriate national monitoring tools. Feedback and follow-up systems will be provided for all the monitoring and accountability layers.

Monitoring and accountability framework[12]
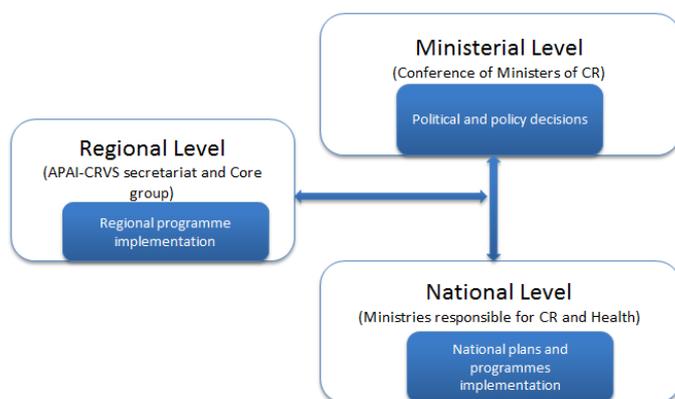
D. Strategic enablers and risks

Expertise and institutions

Expertise and institutions working on improvement of mortality data and statistics exist already in Africa. This can be evidenced through the many years of work undertaken at the country level by WHO, surveillance sites such as those run by the INDEPTH Network, and the Centers for Disease Control and Prevention, among others. Through these institutions, definite human technical capacity has been built, and so these institutions must be supported for long-term sustainability. The gains realized through the work undertaken in countries provide the baseline for initiating improvements and an important source of learning that will guide future implementation.

Established frameworks for coordination

The most important factor in better mortality statistics will undoubtedly be better coordination. APAI-CRVS has provided an unprecedented opportunity to examine how best to develop mortality data in Africa, both through the recognition of mortality as a critical component of CRVS systems, and through the strengthening of health-statistics-registry partnerships, which will provide improved institutional support at the country level. Though the health-registry partnerships are still weak in most countries, a number of countries have already made significant progress in this direction, specifically through the signing of memoranda of understanding. Strengthening these partnerships and promoting better coordination between national, regional and global development partners, is essential in supporting real African progress**.**

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[12] Adapted from the APAI-CRVS programme document (Monitoring and Accountability framework).

Political commitment

Improvements in mortality and cause of death data and statistics in Africa are unanimously supported by African Ministers responsible for Civil Registration across the continent, through their biennial conference. In 2010, the ministers commissioned the establishment of APAI-CRVS. This Programme includes a strong focus on complete collection of death and cause of death information. At their third Conference in 2015, the ministers made specific calls for improvements in mortality and cause of death data (especially in the wake of the Ebola outbreak) and invited African ministers of health to participate in the continental CRVS ministers' conference.

The ministers had also in the past commissioned other regional forums such as the African Symposium on Statistical Development, to adopt CRVS as a specific theme of focus. The African Symposium has taken the lead in highlighting the need for improved CRVS data, including data on death and causes of death. National Strategies for the Development of Statistics now contain a focus on CRVS and mortality data development. Partners such as Statistics South Africa (the secretariat of the African Symposium on Statistical Development) have led in terms of providing support for training other countries in the importance of cause of death data. The political commitment at the regional level is an important milestone and a fundamental stepping stone for advancing progress at the national level. The setting up of a collaboration in April 2015 between the African Union Commission and the Centers for Disease Control and Prevention (United States of America) to create the African Centers for Diseases Control and Prevention, is an example of a strong political commitment at the regional level.

Country civil registration and vital statistics system assessments

African countries have, through the ministerial forum, committed to undertake comprehensive assessments of their CRVS systems and to develop costed action plans based on the findings of the assessments. The assessments entail a holistic review of the civil registration system covering birth, death, marriage and divorce registration and the vital statistics system. Twenty five countries have already completed the assessments, while about 10 more have committed to assessing and planning improvements by 2017. The assessment and planning processes represent an unprecedented opportunity for improvements in mortality and cause of death data and statistics in Africa, including undertaking historic processes such as legislation review where necessary.

Technologies

Technologies exist to support mortality data improvement, for instance:

- Better hospital information systems including electronic medical records are being implemented.

- Training materials are available to improve physician cause of death certification.

- Automated tools such as IRIS can be used to improve coding of cause of death.

- Verbal autopsy tools have been streamlined and automated, however, implementation processes have not been universally defined.

- Mobile technologies exist to support better data collection, especially for community deaths.

- Routine data linkages can be made safely and securely.

The key is to ensuring these elements are anticipated and scaled to support a data collection process with the ultimate goal of national improvement in mortality statistics. This will mean attention to system design and interoperability, within the data collection design and methodological context.

Risks

The building blocks for better mortality statistics in the context of CRVS systems include comprehensive assessment, national strategic and implementation planning, and coordinated investment. Success in these initiatives ride on the premise of sustained political commitment at country and regional levels, the technical capacities of countries, coordination between country agencies and their development partners, and integrated approaches that support best outcomes for country data. The major risk is the failure of countries to lead, own and contribute to the improvement process, as they should. Other threats to the strategy are the failure to secure resources to support the initiative at country and regional levels, the lack of political commitment, the lack of support by development agencies and partners, and the failure to tackle uncoordinated approaches that promote parallel and fragmented systems.

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Appendix
Five-year Regional Actions for Improving Mortality Statistics
For discussion

	Country plans for better designed mortality statistics systems	*Country capacities and regional expertise*	*Scalable and integrated projects*	*Norms, standards and guidance*	*Knowledge development and sharing*
2015 (July – December)	African Partners: Develop guidance and templates to support key country actions: • Baseline report on mortality collection in the country. • Review the CRVS comprehensive assessment. • Draft TOR mortality statistics technical working group. • National, costed plan for improvement of mortality statistics.	• **Technical follow up** – countries with ready mortality work, including follow up of individual countries from the 2014 cause of death workshop (October 2015). • **Cairo workshop** with experts to cover initial reporting on multiple mortality collections; designing and improving mortality collection and statistics in conjunction with national assessments and planning (September 2015).	**Priority given to projects which scale to improve national death registration data and strengthen national cause of death systems.** Examples in 2015 include: • **Sampled projects designed for scale,** including death registration and cause of death (e.g. CDC* project in Zambia). • **Hospital projects** designed to improve notification and recording of causes of death (e.g. WHO DHIS2* project in Ghana, and United Republic of Tanzania). • **Scaling present surveillance systems**, e.g. the CHESS*project, INDEPTH* Network. • **Automation for improved national coding systems** (e.g. IRIS* project in South Africa). • **Financing projects support integrated approaches** – e.g. the World Bank GFF* approach; Global Fund project in Zimbabwe.	• Develop framework for guidance from Cairo workshop. • Preparatory development work (baseline reporting, templates, reference groups).	• Case studies, especially country experiences, and INDEPTH knowledge. • Links to CRVS Centre of Excellence. Country and regional workshops to be developed as part of a knowledge sharing platform, south-south focus.
	Immediate actions: • **Endorsement by African countries at the African Symposium on Statistical Development** • **African mortality statistics – CRVS financing meeting** • **Pool of regional expertise created (Cairo workshop)**				

* *Abbreviations*: CDC, Centers for Disease Control and Prevention; DHIS 2, District Health Information Software 2; CHESS, Community Health and Environmental Surveillance System; INDEPTH, International Network of field sites with continuous Demographic Evaluation of Populations and their Health; IRIS is an automatic system for coding multiple causes of death and for the selection of the underlying cause of death; GFF, Global Financing Facility in support of Every Woman, Every Child.

	Country actions:	Develop and deploy expertise and capacity at country and regional levels	Scaled and integrated projects	Norms, standards and guidance	Knowledge management and sharing
2016	Countries: • Review or supplement (or both) CRVS comprehensive assessments to ensure that contemporary design is incorporated. • Publish baseline mortality report. • Develop country improvement plan. • Establish a technical working group.	• **2016 Africa Workshop – Mortality Statistics Improvement (five to eight countries).** • **Direct technical placement (five countries)** to support national statistical development, starting with mapping and analysis report. **Experts** – consultancies, in country deployment (CRVS, other partners).	Development of guidance on technical project design and implementation, based on these key projects, and the development of a set of financing guidance for best investments: • Sampled projects designed for scale • Hospital projects • Scaling of present surveillance systems • IRIS automation for improved national coding systems • Financing projects that support integrated approaches.	**Aggregate death and cause of death implementation resources,** based on: • Developing country plans for better design for mortality statistics as a system. • Reviewing comprehensive assessment tools and processes. • Improving methodological design and development work. • Building linkages with civil registration systems as a priority. • Undertaking immediate development of mortality systems in hospitals, including review and standardization of health facility data collections. • Improving data collection for	Case studies and evidence. Annual training programme developed – including methodology, classification and analysis. Suitable African institutional arrangements negotiated. Plan and conduct broader annual awareness programme (e.g. focus on Medical Certification Awareness).

2017	Countries: • Review CRVS comprehensive assessments to ensure contemporary design is incorporated. • Publish mortality report. • Monitor country improvement plan. • Support technical working group	**Ongoing programme:** • Annual regional workshop for five to eight countries. • Direct technical placement for ten countries, starting with mapping and analysis report. • Technical reporting and follow up. • Regional experts deployed in country placements.	Scaled project implementation and monitoring.	community deaths, including development of guidelines for data collection on community deaths. • Developing better guidance on mortality data collections and statistics in situations of conflict or health emergency. • Improving guidance for quality and analysis of data. **Improving methodological guidance, including:** Developing sample collection systems based on a civil registration frame (using sample approaches to improve death registration in the selected sample and scaling to ensure representativeness).	Case studies and evidence. Annual training programme. Ongoing annual awareness programme.
2018	Countries: • Review CRVS comprehensive assessments to ensure contemporary design is incorporated. • Publish mortality report. • Monitor country improvement plan. • Support technical working group.	**Ongoing programme:** • Regional workshop for five to eight countries. • Direct technical placement for ten countries, starting with mapping and analysis report. • Technical reporting and follow up. • Regional experts deployed in country placements.	Scaled project implementation and monitoring.	Review ICD-11 release for future implementation	Case studies and evidence Annual training programme Ongoing annual awareness programme

2019	Countries: • Review CRVS comprehensive assessments to ensure contemporary design is incorporated. • Publish mortality report. • Monitor country improvement plan. • Support technical working group.	**Ongoing programme –** • Regional workshop for five to eight countries. • Direct technical placement for ten countries starting with mapping and analysis report. • Technical reporting and follow up. • Regional experts deployed in country placements.	Scaled project implementation and monitoring.	Review guidance and gaps	Case studies and evidence Annual training programme Ongoing annual awareness programme
		More than 20 countries with technical placements, system designed, integrated activities, mortality reporting. Measured increases according to targets.	Technical projects developed and integrated for better mortality reporting.	Guidance developed and operationalized early to support development.	Ongoing knowledge development to support country technical development.