Zambia Progress on SAVVY

Why Civil Registration?

Civil registration is the process of recording births and deaths in a population—with pertinent information on illness characteristics and cause of death included—conducted by an administrative system mandated by government to register events in accordance with the legal provisions of the country. This is not just a matter of government bureaucracy but is essential information for a national health service so that it understands the population characteristics in the country, region by region, the burden of disease, and trends in births and deaths—all of which affect health services and allocation of money for health services.

The challenge arises—as in Zambia—when the Civil Registration and Vital Statistics (CRVS) system is new or not yet highly functional. Sample Vital Registration with Verbal Autopsy (SAVVY) is a way to fill this gap. SAVVY was developed by MEASURE Evaluation and the U.S. Census Bureau and is a family of methods that allows the direct measurement of vital events and the determination of causes of death in a nationally representative sample of small areas, or in selected 'sentinel' locations. The components of SAVVY include demographic surveillance that registers resident population, mortality surveillance to report and register deaths in a resident population, and verbal autopsy (VA), to determine likely cause of death through interviews with next of kin and caretakers.

In Zambia, the first phase of SAVVY was led by the Central Statistical Office (CSO) in partnership with the Ministry of Health (MOH) and other government institutions in Zambia. SAVVY implementation provided an opportunity to supplement Zambia's vital registration system, as well as provide key information on births, deaths, and causes of death. SAVVY helps meet the growing need for accurate and reliable vital statistics and mortality indicators at various levels (national, provincial, rural and urban).

Impact of SAVVY on Country Progress

Initially, SAVVY was first commissioned as a pilot project to test the feasibility of using a World Health Organization (WHO) standard methodology,

The Zambia team at the SAVVY workshop in February. MEASURE Evaluation photo by Kathy Doherty

completing this first round in 2010 with support from the Centers for Disease Control and Prevention (CDC). This was later expanded to cover nine provinces, with the main objective of providing nationally representative estimates of age and sex, and cause-specific mortality fractions. The first phase is now complete, and the second phase is being implemented, overseen by the Department of National Registration, Passport and Citizenship (NRPC) under the Ministry of Home Affairs. The objective of this second phase is to strengthen the collection and reporting of national vital registration data, which SAVVY helps Zambia to do, for the ultimate goal of using the detailed information for governance, planning, management, monitoring, and evaluation of national programs. Other government entities participating in or helping to enable SAVVY include the Ministry of Health, Central Statistical Office, Ministry of Community Development, and the Ministry of Chiefs and Traditional Affairs.

Zambia also enjoys the cooperation and assistance of partners: CDC, UNICEF, World Vision, WHO, and others.

The recent SAVVY conference held in Malawi is reported on below. Key learnings for the Zambia team attending are that SAVVY—good as it is already—can possibly be enhanced through use of geographic information systems that help display visual information about the country as a whole and about SAVVY sampling areas in particular.

In technical terms, the team came away from the conference having taken decisions to further examine how to effectively apply available resources for SAVVY's intended purposes and results, increase effort on improving the calculation of death rates, and training verbal autopsy data collectors in the process of "coding" cause of death so that they can enhance their skills.

In addition, discussions helped the team choose to further focus on the effectiveness of SAVVY by strengthening coordination among the various government entities involved and by providing to the SAVVY sampling areas more feedback on the information gathered and how it will be used to serve citizens.

CRVS Strengthening with SAVVY Implementation

The majority of countries in sub-Saharan Africa lack a fully functioning civil registration and vital statistics (CRVS) system. These countries rely primarily on population-based surveys and censuses to generate fertility and mortality data, which are essential elements in determining health issues and services needs in any country.

In recent years, a number of countries in the region have initiated efforts to strengthen their nascent CRVS systems. In particular, Malawi, Tanzania, and Zambia have implemented Sample Vital Registration with Verbal Autopsy (SAVVY) as part of a sustained, incremental effort to gather this essential data. SAVVY was developed by MEASURE Evaluation and the U.S. Census Bureau and is a family of methods that allows the direct measurement of vital events and the determination of causes of death in a nationally representative sample of small areas, or in selected 'sentinel' locations. The components of SAVVY include demographic surveillance that registers resident population, mortality surveillance to report and register deaths in a resident population, and verbal autopsy (VA), to determine likely cause of death through interviews with next of kin and caretakers.

The regional workshop[1] was designed to improve knowledge among the three countries about processes, institutions, and structures required to implement SAVVY, and to share details on how each has designed and implemented SAVVY within their countries. Specifically, the three countries shared how they work with civil registration agencies locally; their steps for linking SAVVY findings with facility-based health information systems and newly developed CRVS systems so that the causes of death SAVVY finds can be captured in the CRVS system; and to educate and inform stakeholders and donors of SAVVY accomplishments and potential—both to generate ongoing donor support and to build a constituency for SAVVY and new CRVS systems to complement each other.

Attendees included officials from ministries of health (MOH), partners implementing SAVVY activities, national statistics offices and registration officials, and donors such as the Bill & Melinda Gates Foundation, the Centers for Disease Control and Prevention (CDC), the Data for Health Initiative (D4H), the Karonga Prevention Study/Malawi Epidemiology and Intervention Research Unit (KPS/MEIRU), the U.S. Census Bureau, the World Health Organization (WHO), and MEASURE Evaluation.

Workshop Proceedings

Malawi's Chief of Health Service, Charles Mwansambo, in his opening remarks, highlighted the need for evidence and quality data to inform policies and decision making. Recognizing the long timeline for creating a robust civil registration system, Dr. Mwansambo focused on the need for interim measures, such as SAVVY, to generate vital events data. Malawi—among the three countries, the one in the earliest stages of the design and implementation of its CRVS system—is currently doing a phased roll-out of birth registration at health facilities in a number of districts while death certification still relies on patient request.

Tanzania, on the other hand, has a long tradition of civil registration, and an existing CRVS strategic plan, but lacks a coordinated legal and implementation environment. There is a renewed focus on reaching goals of registering births within 90 days and deaths within 30 days, whether manually or electronically. Lastly, Zambia has registration offices in all districts in a decentralized system and CRVS is part of the national strategic action plan for 2015 through 2019, which includes the implementation of SAVVY as well as linking the CRVS system with other systems.

Across all countries, the goal was to be able to provide **nationally representative statistics**. The first hurdle in that regard is how to construct a representative sample for the SAVVY exercise. Tanzania used a probability proportional to size (PPS) and systematic probability sample of districts, enumeration areas, and households. Malawi designed its sample to

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[1] The workshop was held at the Umodzi Park Conference Center in Lilongwe, Malawi February 23rd through 25th, 2016. The regional workshop brought together representatives from government and implementing partner entities in Malawi, Zambia, Tanzania and Mozambique as well as donors and development partners to review the current situation of the civil registration and vital statistics (CRVS) systems in the region as well as their use of Sample Vital Registration with Verbal Autopsy (SAVVY).

be representative at the national, urban/rural, regional and ministry of health "zone levels" in 37 SAVVY sites. Similar to the other countries, Zambia relied on census data to complete its sampling. A one-stage sampling of population segments within each province was completed, stratified by rural and urban areas, and 76 segments were selected, allowing for both national- and provincial-level estimates.

The **process of conducting verbal autopsies** differs in each country. Zambia utilizes employees of the MOH, who use WHO questionnaires and follow the standard SAVVY process of conducting verbal autopsies for deaths reported by community key informants (CKIs). Unlike Zambia, Tanzania selected interviewers who expressly did *not* have a clinical background, in order to avoid bias. Tanzania also used the WHO questionnaires, with slight modification for the local context. In Malawi, interviewers are health surveillance assistants who are non-clinical health workers in their districts.

Challenges include sustainability, cost, integration with standard government activities, how the community key informants are engaged, and what types of autopsy forms are standard.

VA interviews: The key challenges for all countries were the distances to reach households, availability of caregivers to be interviewed, households lost to follow-up, faulty recall among those interviewed, and the time needed to administer the questionnaire.

For all countries, once interviews are conducted, medical personnel are engaged for death certification and **coding the cause of death**. In Malawi, a team of trained clinicians meets quarterly to review completed VA questionnaires. Two doctors review the data and, if the cause of death differs, the two doctors must come to consensus. In Tanzania, 50 physicians have been trained to code questionnaires. Each questionnaire is reviewed by two doctors, who must come to a consensus on cause of death. A similar process is completed in Zambia. Challenges identified are incomplete questionnaires or difficulty in reading open-ended responses.

Reporting SAVVY Results

Tanzania described a robust system for reporting data back to the district through district health profiles and district mortality profiles. Data is also fed back to the national level to inform planning. The results of SAVVY in Tanzania show that it is a good representation of the national population conforming to census data. A similar finding was reported by Zambia, which noted two challenges to the reliability of results: 1. Avoiding inclusion of reported deaths outside the defined SAVVY area or outside the defined time period for sampling; 2. Cultural taboos against reporting the deaths of neonates. Malawi has not yet completed follow-up of deaths identified during the SAVVY baseline census, so it did not have data to share, but described the types of indicators that will be calculated.

Coordinating the SAVVY results with other data in country poses some challenges. Tanzania noted problems linking the SAVVY system with the CRVS system due to separate databases that do not speak to each other. While partners are coordinating for the implementation of SAVVY, further linkages are needed to use the data more effectively. Zambia has a national steering committee to ensure that the national strategic action plan includes SAVVY in its scope. The committee has a CRVS technical working group that is active in coordination and ensuring project objectives are met by each of the responsible government entities. Malawi has clearly defined roles for each government entity, similar to Zambia. All agreed that formalized cooperation among government agencies and compatible data sets that all can use are key issues for continued work.

Funding Going Forward

A common need among all countries was the need for additional funds to be committed for SAVVY to continue in the future. While international donors are interested in funding, they are bound by donor priorities and strategies. In order to attract further funding, it's critical that CRVS and SAVVY are included in national strategies and plans, so that donors know it is a country priority.

Each of the development partners and donors provided an overview of its strategies and activities related to CRVS and SAVVY that will guide their commitment for the future.

- CDC Zambia: CDC Zambia initially invested in the country's SmartCare system, which has the capability to register births and could be integrated with CRVS. This digitized health card system is, however, limited by the country's unreliable power grid.
- CDC Malawi: With PEPFAR funding, CDC Malawi has implemented a comprehensive CRVS approach to gathering vital statistics, with a focus on both infrastructure and systems.
- Gates Foundation: This donor is interested in rolling out the **Countrywide Mortality Surveillance for Action (COMSA) system**, and sees the potential of working with existing SAVVY and CRVS systems. It is currently investing in minimally invasive tissue sampling (MITS) to determine precise causes of death.
- WHO: The WHO recognizes the increasing number of censuses and surveys to fill the gap as CRVS systems are strengthened. Its strategy is focused on registration rather than VA, asking countries to register all deaths (both hospital deaths and community deaths) before focusing on improving cause of death reporting.
- Data for Health Initiative (D4H): Funded by Bloomberg Philanthropies, is a four-year project in 20 countries in Africa, Asia, and Latin America, focused on civil registration, data use, and non-communicable disease surveillance. In Zambia, the organization is in the early stages of a work plan to train cause of death coders, and in Malawi to document processes, support training and supervision, and advocate for certification and coding training in clinical curricula.

Sensitization of communities for verbal autopsy: In order to conduct SAVVY, communities must cooperate. SAVVY relies upon learning of deaths in the community, and having access to families and caretakers to interview for cause-of-death determination.

- Malawi begins this necessary sensitization with traditional authorities, group village heads, and village heads, who are gatekeepers of a sort in rural areas, as well as with ward councilors in urban areas.
- In Tanzania, sensitization focused at the community level with involvement of village and ward leaders, but SAVVY implementers noted many challenges in the community, such as cultural taboos, and a general unwillingness to participate; and implementation challenges, such as human resource attrition, and the burden of sending paper questionnaires from a central location.
- Zambia did a more robust public awareness campaign that included billboards, radio spots, newspaper advertising, and t-shirts. It also noted challenges related to local religious beliefs and the influence of leaders who might discourage participation.

Possible helps for the sensitization of communities is to provide them with the information that SAVVY collects so they see how it feeds into national priorities that can provide them with better health services. Also, it may help to provide education for communities so they understand why and how to utilize the CRVS system and the value of verbal autopsies, versus inexact reporting of deaths by untrained persons.

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