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Boost to Healthcare as New Technology is Unveiled

The new software is tailored to the increasingly robust health care system, allowing for real-time data processing and efficient service delivery (Photo: Jacqui Taylor)

Working in his office at the Mutare district hospital, Mr. Maxwell Tinorwa, a counsellor, shifts through volumes of health information data on his computer, a task that is made much easier and simplified through the application of the new District Health Information System version 2 (DHIS-2).

The system enables quick processing of health data for reporting and to inform timely decision-making.

"At the click of a computer mouse, I am able to retrieve, analyse and present information in an aggregated manner" he says, adding, "this has made life easier and reporting quicker."

Introduced in 2010 as DHIS 1.4, through Global Fund (GF), Centre for Disease Control (CDC) and UNFPA funding, the system was upgraded to DHIS-2 in 2013 with support from Global Fund, CDC and UNICEF managed Health Transition Fund.

The DHIS-2 software package is tailored to integrated health information systems, providing a dramatic improvement in data management and analysis for health programme monitoring and evaluation. Its utility is diverse ranging from processing facility registries and service availability mapping to logistics management and mobile tracking of pregnant mothers in rural communities.

"The new system will ensure the availability of real-time data and information for decision making, allowing the Ministry to detect and respond to outbreaks or other health events early," explains Dr. Nyika, deputy director of Health Information System (HIS) in the Ministry of Health and Child Care (MoHCC). Being an online system, it helps in timely reporting and access to data and information. "Its in-built data quality checks are very useful in minimising data inaccuracies," observes Dr. Nyika, adding that the design and flexibility of this system "will allow the ministry to incorporate other programme databases into the national data repository."

So far, 11 reporting systems have been integrated into the DHIS-2 thereby minimizing multiple reporting systems within the MoHCC.

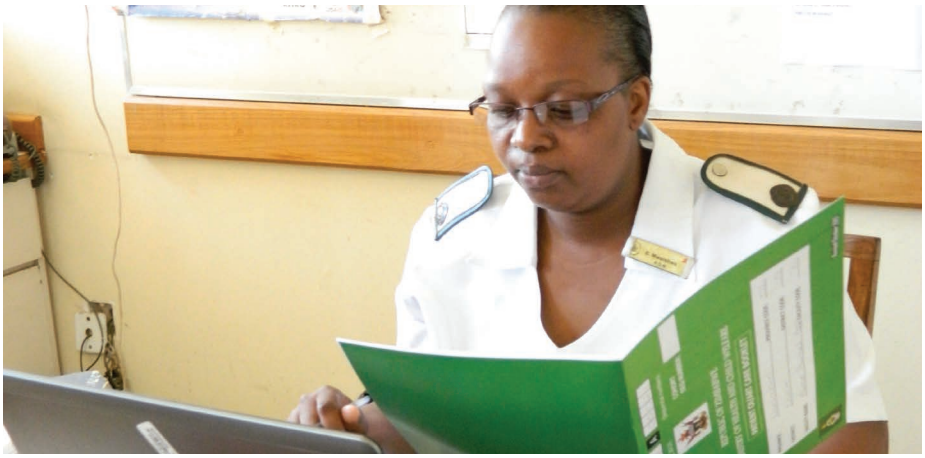
Expressing Global Fund's commitment to Zimbabwe's efforts towards strengthening the country's health system, Mr. Perry Mwangala who is the Global Fund Senior Fund Portfolio Manager, High Impact Africa 2 Department described DHIS-2 as a very efficient tool in "providing real-time data to help decision making at all levels of service delivery".

Mr. Mwangala who oversees the country's portfolio at the Global Fund contends that the initiative will have a ripple effect in the country as districts benchmark against each other and in the process, improving service delivery.

Before the economic decline in the last decade, Zimbabwe used to have one of the best health systems in the region and still has the potential to recreate a robust health system with modest investment, he relates.

"The Global Fund will continue to partner with Zimbabwe to sustain the current systems being set up" stated Mr. Mwangala.

The Dawn of a New IT Era



Beaula Mwarehwa of Mutare District Hospital checking patient details using the DHIS-2 system (Photo: Jacqui Taylor)

Highlights

- *DHIS-2 has been installed in all 10 provinces, 63 districts, cities, 6 central hospitals, and 166 admitting hospitals*
- *Over 600 health workers have been trained in DHIS-2*
- *Over 1200 nurses have been trained in Frontline SMS*

The genesis of the modern national health information and surveillance system can be traced to the adoption of the DHIS-1.4 in 2010. This intervention assisted in strengthening the MoHCC national Health Information and Surveillance System (HISS). The system was piloted in Mashonaland Central Province from February-April 2010 and rolled out nationally in August 2010.

The introduction of DHIS-1.4 resulted in a remarkable improvement in the completeness of the reporting system but timeliness remained a major challenge, an issue being addressed with the implementation of DHIS-2 in 2013.

With funding from the Centre for Disease Control (CDC) and technical assistance provided by Research Triangle International (RTI), the health ministry in the first quarter of 2013 successfully piloted DHIS-2 in the Manicaland province. The lessons learnt from the pilot were used to inform the national rollout to all central, municipal, provincial, district, mission and rural hospitals in the country.

Working in collaboration with the MoHCC and other development partners, the Global Fund played a key role in supporting the introduction of the new system. Through UNDP, the Global Fund provided additional funding of US $2.7m. This was crucial in addressing the funding gap for the national rollout in 2013 and ensuring that implementation was not delayed.

This support facilitated the procurement of 309 laptops and training of health workers on the new system. Enhancing the skills and capacities of core staff, two female ministry staff were sponsored by Global Fund to undertake advanced training in India on Routine Health Information System (RHIS). Having RHIS skills is very important at all levels of the health services because improved health information is directly linked to good management and service delivery.

Subsequently, all key health workers at sites where DHIS-2 has been installed have since been trained accordingly.

Meanwhile, to ensure that all health facilities countrywide are fully covered, the MoHCC scheduled a planning and review meeting with all stakeholders in January 2014. Going forward, a 3-year (2014-2016) action plan is being developed to further guide the rollout of DHIS-2 to the health facility level.

In addition, funding from the Global Fund enabled the University of Oslo, Norway, to provide technical assistance to the MoHCC in the implementation of DHIS-2. And with the inclusion of in-patient dataset in the DHIS-2, health workers in admitting hospitals have also been trained in International Classification of Diseases (ICD-10) coding concepts to equip them in .relevant skills.

The DHIS-2 software is used in more than 30 countries in Africa, Asia, Latin America and the South Pacific. In Africa, other countries that have successfully adopted the new system are Kenya, Tanzania, Uganda, Rwanda, Ghana and Liberia.

Patient Management System Goes Digital

Managing the records of a single patient on Anti Retroviral Therapy (ART) is no mean task, especially if—as is common practice in Zimbabwe—the work is done manually. In a country with an estimated 700, 000 people on ART, this translates into huge workload, straining the already over-burdened health worker.

"Sometimes, the data clerk or nurse has to fill up to 23 registers for one individual. This involves a lot of paper-work. That is why our storage facilities are full to the brim with files and registers" explains Dr. Regis Choto who is deputy OI/ART (Opportunistic Infections Anti-Retroviral Treatment) coordinator, HIV and TB Unit in the MoHCC.

The introduction of the electronic Patient Management System (ePMS), supported by the UNDP-administered Global Fund programme is changing all that, ushering a new exciting era for patient management.

"This labour-intensive task is now being reduced to one paper trail through the use of the mandatory OI/ART booklet. The rest is done electronically through ePMs" says Dr. Choto.

Introduced in Zimbabwe in 2013, ePMS will go a long way in improving access to patient health information and to making well informed clinical decisions leading to better patient outcomes.

"The primary interest of the Global Fund is to support the Ministry of Health and Child Care to improve its ability to monitor patient data", says Mr. Perry Mwangala who oversees Zimbabwe's portfolio at the Global Fund. With the electronic patient monitoring in place, policy makers will have more reliable data on patients, including those on long-term treatment, he said. Stressing the value of reliable, real-time data in health care, Mr. Mwangala said that the ePMS "will improve forecasting and quantification for commodities since health officials will have more reliable data on people undergoing treatment".

The new system has reduced the paper trail significantly enabling health workers to perform their dutes more effectively. (Photo: Jacqui Taylor)

Highlights

- *Phase 1 (2013) involves US $ 2.5 million contribution from the Global Fund and technical support from WHO and other development partners*
- *534 high-volume ART sites to be covered in three years*
  - *83 sites in 2013*
  - *267 facilities in 2014*
  - *184 sites in 2015*
- *286 laptops, 2 servers, 83 personal computers, printers and accesories procured for first phase*
- *1,308 laptops required for Phase 2 (2014) and 3 (2015) have been procured.*

"The system is automated. Therefore it is mandatory to complete the OI-ART number which is the identifier for the patient, including the surname, sex and date of birth" relates Mr. Chris Magama, who is the monitoring and evaluation officer based at the Ministry of Health and Child Care.

"It is very ideal for electronic calculations, analysis, patient information consolidation as well as providing information on early warning indicators and the rate of patient survival," he says.

In addition, increased access to detailed patient information will create more robust programme evaluations while computerized data aggregation will eliminate multiple entry of patient information across different paper registers.

"So far, most of our healthcare staff are very excited about the new system. Before it was introduced they had to fill multiple registers forcing them to go home late after work," says Dr. Choto, adding that managers and supervisors will also benefit tremendously from the use of ePMS. "Data security and staff oversight will become easy because everything can be verified online."

The initiative, financed with a US $ 2.5 million contribution from the Global Fund and technical support from WHO and other development partners will culminate in the phasing out of paper registers and introduction of ePMS throughout the country. WHO support included the provision of technical assistance and support for the conduct of monitoring and evaluation needs assessment in 2012.

Based on the implementation plan, an estimated 534 high-volume ART

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Improving Service Delivery through Reliable Communication

A rural health facility with installed VSAT powered by solar panel.

"The introduction of Frontline SMS, a cell based system that captures and submits disease surveillance data into a centralised databse, resulted in the dramatic increase in both timeliness and completeness of disease surveillance data, making it possible for health service delivery management at all levels to monitor the incidence of diseases and other health events of public health concern more accurately and promptly."

- Joshua Katiyo, Health Management Information Systems Manager

Working in close collaboration with the MoHCC, the Global Fund programme administered by UNDP has finalized the plans for installation of two fixed internet technologies in 82 health facilities nationwide, paving the way for better communications and timely reporting.

This development will go a long way in supporting the new ePMS, DHIS-2 and other systems being developed to strengthen the health information system.

By December 2013, installation of almost 97% of VSAT sites and 80% of fibre optic sites had been completed. The last phase of this activity will be completed in the first quarter of 2014.

In addition, where fixed internet is currently unavailable, Global Fund provided the MoHCC with 160 dongles and air-time to admitting hospitals. This helps in the strengthening In-patient Morbidity and Mortality Information System (IMMIS). The IMMIS refers to a reporting system whereby all admitting hospitals capture and report date on admitted patients. This system is useful in calculating disease burden, types of diseases and causes of morbidity and mortality among others.

According to the MoHCC, the old IMMIS program is being replaced by a new windows version which has been linked to the District Health Information Software (DHIS-2) . (See lead story on page 1).

Meanwhile UNDP/Global Fund continued to support the Weekly Disease Surveillance System (WDSS) by paying monthly air-time for all cell phones being used for this purpose.

Following the introduction of the use of cell phones in 2011, completeness of weekly disease surveillance system reports has greatly improved. It increased from under 50%, in 2010, to above 90% in 2013.

In 2014, additional 450 cell phones will be procured for the WDSS, ensuring 100% coverage of all health facilities in the country with cell phone facilities.

Electronic Patient Management System

Continues from page 3

sites will be covered in three years starting 2013. When completed in 2015, about 97% of patients on ART would be covered.

The first phase kicked off in 2013 tragetting 83 sites, mainly central, provincial, district hospitals and few city clinics. An estimated 61% of patients on ART nationwide were covered by ePMS at these sites by the end of 2013. In 2014, an additional 267 facilities comprising rural, mission hospitals and some large clinics will be added, bringing the cumulative sites to 350. The remaining 184 facilities will be covered during Phase 3 in 2015.

In the Global Fund new funding model, that features improved predictability of funding, appropriate resources have been approved to support the three phases of implementation.

To enable them fulfil their duties effectively, four nurses, one pharmacist, a matron and health information officers from each facility, district and province have been trained on the new software.

The implementation of the ePMS also benefited from a University of Dar es Salaam, Tanzania team that provided technical support for development of the system and training of in-country personnel on the appropriate application of the new system.

"We have trained cadres from key health facilities on how to use the system" emphasizes Dr. Choto.