Health Information Officer, Doreen Saganya and co-worker, Oscar Chidindi
Performing ePMS data entry at Mutare District Hospital
Boost to Healthcare as New Technology is Unveiled

Roll-out of DHIS-2

Working in his office at the Nyanga District Hospital, Mr Maxwell Tinorwa, a counsellor, sifts through volumes of health information data on his computer, a task that is greatly 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 - 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 Health Transition Fund (UNICEF).

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 registers 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 Ponasai 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 minimising 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 - 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, improve service delivery.

Before the economic decline of the last decade, Zimbabwe had 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.”

The Dawn of a New IT Era

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 (HIS5). 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), in the first quarter of 2013 the health ministry successfully piloted DHIS-2 in the Manicaland province. The lessons learnt from the pilot were used to inform the national roll-out to all central, municipal, provincial, district, mission and rural hospitals countrywide.
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 roll-out 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 country-wide 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 roll-out 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.

**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
Patient Management System Goes Digital

The Benefits of ePMS

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, deputy OI/ART (Opportunistic Infections Antiretroviral 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 in 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.”

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 MoHCC 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 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 ideal for electronic calculations, analysis, patient information consolidation as well as providing information on early warning indicators and the rate of patient survival.”

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 an initial US$2.5m 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 sites will be covered in three years starting in 2013. When completed in 2015, about 97% of patients on ART should be covered.

The first phase kicked off in 2013 targeting 83 sites, mainly central, provincial and 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.
The Global Fund New Funding Model, featuring improved predictability of funding, has approved appropriate resources to support the three phases of implementation.

To enable them fulfill their duties effectively, four nurses, one pharmacist, a matron and health information officers from each of the 83 facilities, 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.

**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 accessories procured for first phase
- 1,308 laptops required for Phase 2 (2014) and 3 (2015) have been procured.

**Fixed Internet**

Working in close collaboration with the MoHCC, the Global Fund programme administered by UNDP has finalised 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.

**Internet Installation Status at 82 sites - December 2013**

<table>
<thead>
<tr>
<th>Technology Type</th>
<th>Number of Sites</th>
<th>Status of Implementation</th>
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<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Fibre</td>
<td>44</td>
<td>32</td>
</tr>
<tr>
<td>VSAT</td>
<td>38</td>
<td>37</td>
</tr>
</tbody>
</table>
Mobile Internet
In addition, where fixed internet is currently unavailable, Global Fund provided the MoHCC with 160 dongles and airtime 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 data 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 programme is being replaced by a new windows version which has been linked to the District Health Information Software (DHIS-2). (See story on page 2).

Weekly Disease Surveillance System
Meanwhile 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, an additional 450 cell phones will be procured for the WDSS, ensuring 100% coverage of all health facilities in the country using cell phone facilities.

“The introduction of Frontline SMS, a cell based system that captures and submits disease surveillance data into a centralised database, 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,” stated Joshua Katiyo, Health Management Information Systems Manager.
Procurement and Supply Chain under the Global Fund Grant

The Global Fund has disbursed US$ 487.8 million to Zimbabwe since the inception of UNDP as Principle Recipient. Of this amount, 65%-75% has been used to support Procurement and Supply Chain Management.

Public health intervention is often complex, multi-faceted and contextual. Key to intervention is supply. No supply, no intervention, no programme. The engine that ensures physical availability of the intervention to the beneficiaries is the supply chain.

Ensuring that commodities procured under the GFATM grants, get to end-users is a major task, but the MoHCC and its Procurement Supply Chain Management partners in Zimbabwe have joined forces to create an effective procurement system which, in turn, fosters conditions for an effective Health Delivery System that improves the lives of every Zimbabwean.

The procurement process usually happens as follows:-

The MOHCW identifies future requirements for various products ranging from pharmaceutical drugs and vehicles to IT equipment and mosquito nets. Specifications and quantities required are established, as are time-lines for expected delivery dates.

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WFP organises tax rebate letters from MOHCW allowing consignments to enter the country duty free. Once approval is granted, WFP advises the supplier to begin the shipping process, which usually takes 6 to 8 weeks.

On arrival at customs, a clearing agent assists in processing the consignment for release. CKD Clearing Agents predominantly facilitate release of goods at the Beitbridge border for UNDP and WFP. The clearing process is started whilst the commodities are in transition, mainly by ship. They are then transported to the border post by haulage trucks where inspection by the Zimbabwe Revenue Authority (ZIMRA) takes place.

Angela Richards, an office manager for CKD, explained that when ZIMRA updated their technology in November 2011, it made the process of clearing goods much faster and more effective.

‘Having all databases running electronically from ZIMRA has made all our lives a lot easier.’

This information is then shared with the UNDP that facilitates procurement in partnership with UNICEF and WFP. Through a tender process, a supplier is identified and an order placed. Payments to the supplier are only made upon timely and satisfactory delivery of the goods.
Once cleared, goods are transported to a Harare storage facility (such as Natpharm’s - usually storing Antiretroviral (ARV) drugs) or to Manica Warehouse (a WFP storage facility storing various non health commodities funded by the GFATM grants). The verification and receiving of these commodities are then done by the clearing agent and representatives of UNDP and UNWFP within six hours. In addition, there are occasions when the delays are caused by problems at the border posts.

A official at WFP remarked that “storage remains a big challenge and that WFP, in an attempt to address the situation, erected thirteen tents each with an average capacity of 500mt.”

Once materials are ready for dispatch, the logistics assistant receives a distribution plan from the MOHCW. WFP then actively involves local community members who are hired to load or unload shipments.

"Aside from the challenges faced, the Global Fund grant has made substantial impact on the medical supply to patients in Zimbabwe and we have reached 85% of people in need of ARVs - a goal meant to be achieved by 2015."

Zimbabwe has a pool system; commodities from various donors are stored at one facility and jointly distributed. This ensures effective coordination of service delivery.

Pharmacy Services and Laboratory Services (both under the MoHCC Curative Services) play a crucial role in the procurement process.

Mr Mudzimu, Deputy Director of Pharmacy Services, recommended three areas where the procurement process could be improved: time management, staff capacities and communication.

"When the medical supply chain gets delayed, the entire process of medicating targeted communities is put in jeopardy. We are dealing with human lives and it needs to be ensured that their course of medicine will be uninterrupted, especially those suffering from TB and AIDS."

The new TB/Malaria Health Information vehicles are officially handed over.

ARVs are unloaded from charter flights into Natpharm’s storage facility.

An official of the company that supplied the trucks demonstrates the new X-ray system inside the new TB/Malaria health information vehicle to Mr. Paul Chimeda, the Deputy Minister (MoHCC).
Zimbabwe and Zambia in Joint Cross-border Malaria Reduction Programme

Following the Cross-border Malaria Initiative (CBMI) meeting held in Harare between the 26th & 27th of November 2012, the two countries formally launched the initiative in a historic ceremony held in the idyllic city of Livingstone, Zambia on 25 April, 2013. The Zimbabwe-Zambia Cross-Border Malaria Initiative will complement existing national malaria control programmes in both countries.

The CBMI is aimed at encouraging the two countries to harmonise their policies and tools, synchronize operations, mobilise partnerships and empower communities for malaria interventions as well as promoting exchange of best practices and information. The launch also involved the demonstrations of vector control activities like indoor residual spraying (IRS) and long lasting insecticide nets (LLINs) at Nsongwe village, a rural community in Livingstone.

To jump-start the process of implementing the initiative, the Global Fund disbursed about US $882,000 to support the joint secretariat.

“There is no doubt that joint co-ordination of malaria control interventions, harmonization of policies and tools, synchronization of operations and joint collaboration would accelerate reduction of malaria transmission among the border communities and contribute significantly to malaria elimination,” stated Dr Douglas Mombeshora, Zimbabwe’s Deputy Minister for Health and Child Welfare (now, the Ministry of Health and Child Care).

Dr Mombeshora added that partnership was expected to accelerate response efforts to meet the Millennium Development Goals by 2015. He stressed that apart from the Global Fund support, there was no specific budget for the initiative, but countries would be expected to use their usual malaria budgets.

Zambia’s Health Minister Dr Joseph Kasonde said the collaboration was the only way the two countries could achieve some of their set targets on malaria. He said efforts to control malaria were sometimes restricted by borders, yet mosquitoes knew no boundaries.

“We hope this initiative will start showing results towards elimination of malaria in the next two years,” Dr Kasonde said.

Above: A Nsongwe villager is happy to receive LLINs to help protect her family against malaria, carried by anopheles mosquitoes.
The regional initiative if successful “can lead the way for other countries in the continent. Our aim is to save as many lives as we can, with the current grants,” observed Linden Morrison, who heads the department at the Global Fund overseeing grants to these two countries.

Noting that in the last decade, financing for malaria control increased steeply from less than US$100 million in 2000 to an estimated US$1.84 billion in 2012. Mr. Morrison described this development as important because it allowed endemic countries to significantly scale up prevention, diagnosis and treatment. Consequently, ownership of mosquito nets in sub-Saharan Africa increased from 3 per cent of homes in 2000 to 53 percent in 2010. In addition, more than 1.1 million deaths have been averted.

However, “In spite of the impressive reductions in malaria deaths and cases worldwide, such progress remains fragile,” Morrison explained, underlining the need for more investments and partnerships in fighting the disease.

The Global Fund is currently supporting three malaria grants in Zambia and Zimbabwe, with two grants worth US$22 million for Zambia, and a US$35 million grant for Zimbabwe. Funds are channelled to the Ministries of Health and National Malaria Control Programmes from the United Nations Development Programme (UNDP). One of the Zambia grants is administered by the Churches Health Association of Zambia (CHAZ).

Partners from the Global Fund, World Health Organisation, United Nations and senior health officials from both Zimbabwe and Zambia, also took part in the event.
Brief Description of Performance of selected indicators by Grant:

**HIV/AIDS Grant**
- 7,437,714 people were reached with HIV prevention messages through community interpersonal communication (personal exposures) outreach programmes in 2013.
- A total of 665,199 adults and children with advanced HIV were on ART as at December 2013. There were more adults on ART (93%) than children and more females (62.6%) than males (37.4%).
- 2,274,328 people were tested and counselled in 2013.
- About 55,598 (80%) of the 69,883 HIV-infected pregnant women in need of ARVs received ARV prophylaxis to reduce the risk of mother-to-child transmission of HIV.

**Malaria**
- The proportion of confirmed malaria cases in 2013 was 29.3/1000 population, compared to 21.2/1000 in 2012. The number of confirmed malaria cases increased by about 39% (108,287) from 274,770 in 2012 to 383,057 in 2013. The increase in cases is attributed to outbreaks in Manicaland Province which contributed 50% to all the confirmed cases.
- Cumulatively, 2,580,316 Long Lasting Insecticidal Nets were distributed in 2013; GFATM (1,368,279), PMI (457,000), UMCOR (45,437) and Econet wireless, a private Telecommunication firm (10,000 Long Lasting Insecticidal Nets) made the contributions.
- About 90% (273) of the 302 confirmed malaria cases reported in the 7 malaria pre-elimination districts in Matabeleland south Province were fully investigated.
- About 92% (2,488,166) of the targeted rooms (2,695,447) were sprayed with IRS - thus protecting 3,248,792 people; 5% (142,133) more people in 2013/14 season, than in 2012/13 season.

**Tuberculosis (TB)**
- About 81% of new smear-positive TB cases were treated successfully (WHO Global TB Report, 2013).
- According to the 2013 WHO Global Report, the estimated incidence of TB in Zimbabwe was 562 per 100,000 people. The ongoing TB Prevalence Survey will help determine the extent of the disease burden in the country.
- 93.4% (32,267) of the 35,592 notified TB cases were tested and counselled for HIV and knew their status.

**Health Systems Strengthening (HSS)**
- 18,738 health workers comprising 15,261 nurses, 275 pharmacists, 336 laboratory staff, 1,388 doctors, etc. were reported to be in position in 2013.
- Completeness and timeliness of T-5 monthly reports improved during the year; 9,315 completed reports were received at the national level, out of the expected 9,114.
- 28,280,125 OPD attendants, both curative and preventive were recorded in 2013, representing OPD attendance per 100,000 of 21,652 using a national population of 13,061,239 (2012 Census Report).

**Grant Rating, Semesters 1 & 2**
The four Global Fund Grants performed remarkably well and were rated an average of A by the Global Fund.

**Performance of the Grants (HIV/AIDS, TB, Malaria & HSS) by Period, Semester 1 & 2**

<table>
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