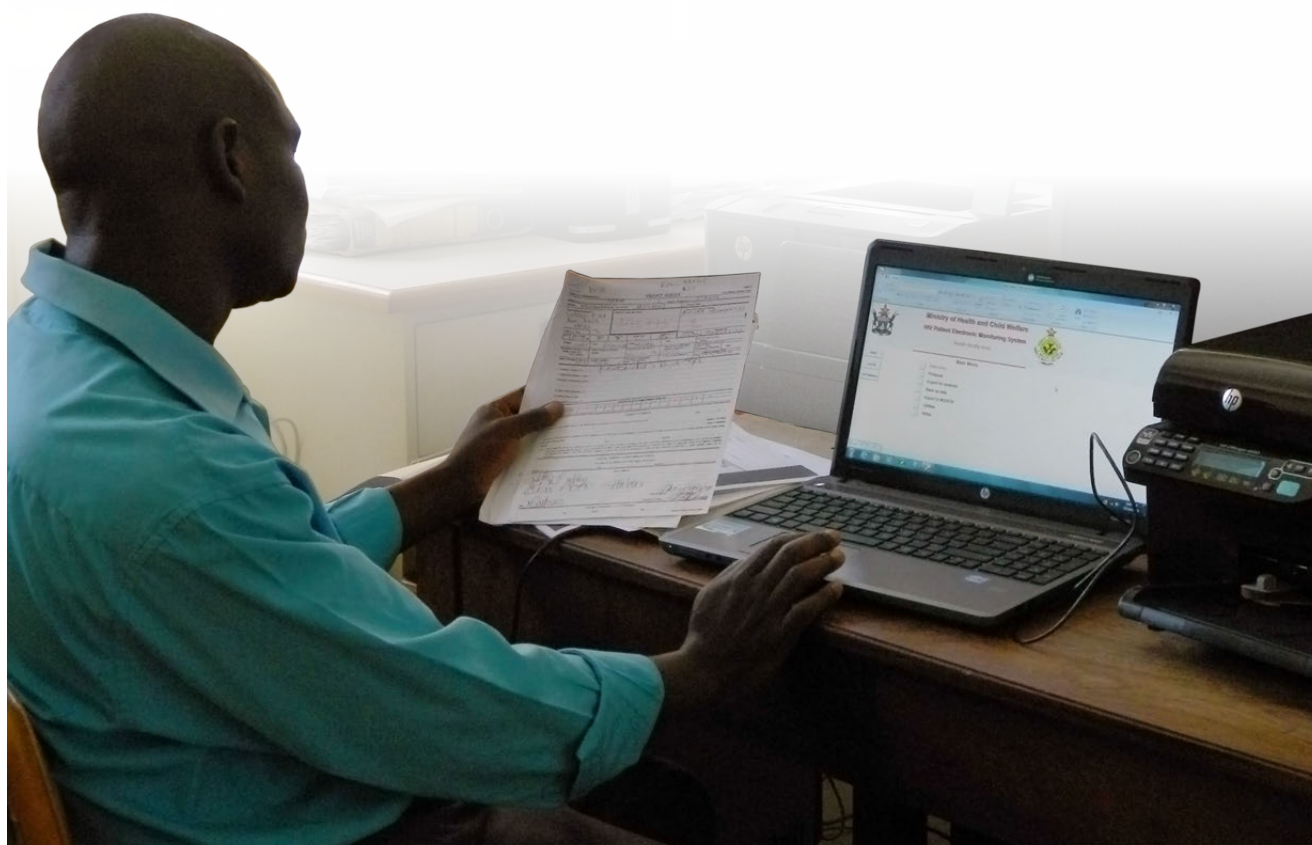UNDP

Empowered lives.
Resilient nations.

Innovation
in the Zimbabwe
Health Information System

Quality data enables Health Workers to deliver more effective treatment.

Content

Introduction:
Health in Zimbabwe

In 2015 Zimbabwe is still recovering from a prolonged period of economic decline that occurred from 1999 to 2008, which resulted in a decrease in funding for social services, and directly contributed to a deterioration of health infrastructure, loss of experienced health professionals, drug shortages and a decline in the quality of health services available. The capacities of most national institutions diminished, with limited financial resources and reduction in the numbers and skills in the workforce. It is estimated that over two million Zimbabweans left the country during this period, including many skilled health professionals. The situation negatively affected the health outcomes of the country: maternal mortality ratio in 2006 was 555 deaths per 100,000 live births translating to six maternal deaths per every 1000 live births; under-5 mortality rate was at 82 per 1,000 live births and neonatal mortality rate at 24 deaths per 1,000 live births (2005-2006 ZDHS).

Since 2009 economic growth and a more stable macroeconomic environment have returned to Zimbabwe, but the country continues to battle high levels of unemployment and the economic recovery remains fragile. The challenging environment has made service delivery extremely difficult for the Government of Zimbabwe and this has impacted on the country's health system.

Three key diseases continue to affect Zimbabwe heavily: about 15% of the adult population aged 15-49 are HIV-positive and Malaria and Tuberculosis continue to be a challenge for the country.

Zimbabwe's Response:
Key Achievements

Significant progress has been achieved over the last decade. The HIV prevalence rate of 15% has declined from more than 25% in 2000, the Malaria incidence dropped 79% from 2000 to 2013. Success rate for treating positive TB cases increased by about 4% from 78% reported in 2011 to 81% in 2014.

These results have been underpinned by the development and implementation of a modern District Health Information System (DHIS). UNDP commissioned this case study to investigate how supporting the collection, collation, analysis and timely transmission of key data has enabled effective prevention and treatment activities, contributed to the understanding of the epidemics affecting the population, and enabled national planning and implementation.

It also looks at how the partnership between the Zimbabwe Ministry of Health and Child Care (MoHCC), UNDP, the Global Fund, Centre for Disease Control (CDC) and other key external partners has worked to support this.

The Introduction of a modern
Health Information and Surveillance System in Zimbabwe

An effective response to HIV, Malaria and Tuberculosis relies on the collection and provision of complete, timely and accurate data to enable better identification of needs, and activities to address these needs. By 2007 the monthly reporting system and the Weekly Disease Surveillance System (WDSS) in Zimbabwe was not fully functional, and reporting levels from service delivery facilities stood at around 50% and 45% for the monthly and WDSS, respectively. This meant that data was not widely available and national planning was challenging.

The genesis of the modern national health information and surveillance system in Zimbabwe started with the adoption of the first version of the District Health Information System in 2010 (DHIS-1), followed in 2013 with the piloting of DHIS-2, using an established software previously implemented in more than 30 countries in Africa, Asia, Latin America and the South Pacific.

Before the DHIS-2 was implemented there were a number of parallel-reporting systems, making it extremely difficult for overburdened doctors and nurses at health facilities.

The DHIS-2 package allows the integration of all reporting systems providing a dramatic improvement in data management and analysis for health programme monitoring and evaluation, leading to more informed decision making.

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 system incorporates the innovative mobile phone based reporting of weekly data, using Frontline SMS messaging, and so far, eleven reporting systems have been integrated into the DHIS-2, reducing the previous multiple reporting systems health staff were burdened with.
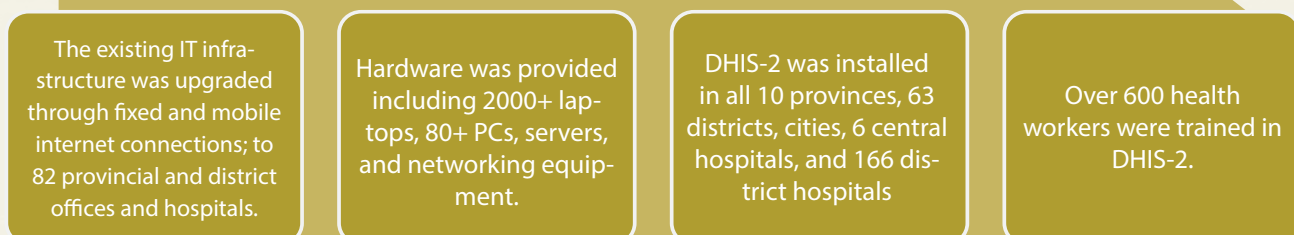
Since 2013 the system has been successfully rolled out country-wide to the national offices of the Ministry of Health and Child Care (MOHCC) in Harare, as well as to 63 districts, 8 provincial and 4 city health information offices. The implementation marks a transition from using paper-based systems in the collection of health data to the use of faster and more accurate electronic systems.

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 informs 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".*

The existing IT infrastructure was upgraded through fixed and mobile internet connections; to 82 provincial and district offices and hospitals.

Hardware was provided including 2000+ laptops, 80+ PCs, servers, and networking equipment.

DHIS-2 was installed in all 10 provinces, 63 districts, cities, 6 central hospitals, and 166 district hospitals

Over 600 health workers were trained in DHIS-2.

The initial experiences reported by users of the DHIS-2 show that it provides a complete, faster, more accurate, more reliable and more efficient system for surveillance of the three diseases. The system itself enables rapid communication and timely reporting upstream, along with enhanced data quality; but also enables queries to be sent downstream in case there is a problem with the data.

Working in collaboration with the MoHCC, CDC funded Research Triangle International (RTI) and other development partners, UNDP and the Global Fund programme played a key role in supporting the introduction of the new system.

Through UNDP, the Global Fund provided significant funding, which was crucial in addressing the funding gap for the national rollout in 2013, and UNDP support ensured capacity development to accompany implementation. The process first involved the development of the IT infrastructure and training of health workers to enable the DHIS-2 system to be installed and used.
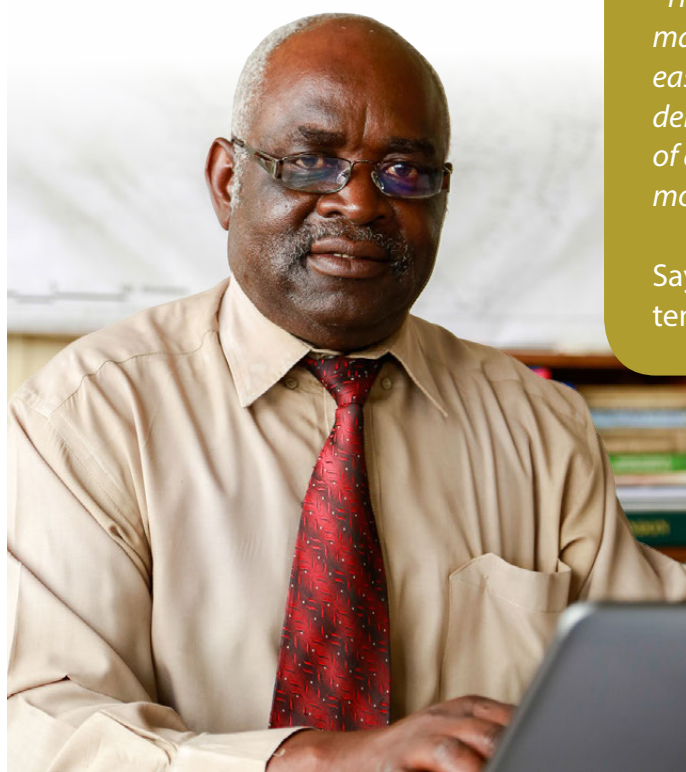
Strengthening the IT infrastructure was a significant undertaking which had to be completed before the DHIS-2 could be rolled out nationally. UNDP has gone a long way in supporting this infrastructure, which will also support other systems being developed to strengthen the health information system, such as the electronic Patient Management System.

"The new system ensures 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.

"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", he observes, adding that the design and flexibility of this system "will allow the ministry to incorporate other programme databases into the national data repository".

Working in close collaboration with the MoHCC, UNDP installed fixed Internet technologies in 82 health facilities nationwide, and where fixed Internet was currently unavailable, UNDP provided the MoHCC with 160 dongles for mobile Internet connection to hospitals, and paid monthly subscriptions to ensure uninterrupted services.

Following this UNDP procured laptops and, with RTI, supported the training of health workers on the new system – all key health workers at sites where DHIS-2 has been installed have now been trained.

"The introduction of Frontline SMS….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"

Says Joshua Katiyo, Health Management Information Systems Manager for the MoHCC.

Weekly Disease Surveillance System

During the introduction of the DHIS-2, UNDP, in collaboration with other partners, also continued to support the Weekly Disease Surveillance System.

This included the initial purchase of cell phones in 2011, and the installation of 'Frontline SMS', a data capturing software, which makes it possible to transmit weekly surveillance data to the district, provincial and national levels. The project increased data submission from under 50% in 2010, to above 94% in 2014, reporting from over 1200 sites. In 2014, an additional 450 cell phones were procured for the WDSS, bringing the total to 1700 cell phones provided and ensuring 100% coverage of all health facilities in the country.

The Early Infant Diagnosis (EID) system has been integrated into the WDSS through which laboratory results of children under 1 year are sent to the health facilities. The project also guaranteed monthly airtime for all cell phones being used for this purpose.

1,700 cell phones with Frontline SMS data capturing software installed have been distributed to health facilities to facilitate transmission of weekly disease surveillance data.

The Weekly Disease Surveillance System strengthened and coverage increased from 500 to over 1,700 sites to transmit timely weekly disease surveillance.

Over 1200 nurses have been trained in Frontline SMS.

Key Results

- Significant and on-going investments in the DHIS-2 and the Weekly Disease Surveillance System have strengthened the national Health Information System (HIS).

- The result is more timely and reliable health information enabling improved analysis, more informed decision-making and quality national forecasting and planning.

- Improved responsiveness of the services for patients.

- The completeness of the monthly reports has increased from around 50% to over 98% and the weekly reports from about 45% to 90% as of December 2013.

- The reporting burden of health workers has been significantly lessened through the integration of different reporting systems into the DHIS-2, enabling them to spend more time with patients.

Key Success Factors

The key success factors include:

- Availability of adequate resources ensured the timely roll out of the systems.

- Collaboration was key such as technical support from the CDC funded RTI Project and technical support from the University of Oslo with the roll-out.

- Leadership by the MoHCC was crucial along with effective coordination with UNDP and RTI.

- d) Timely procurement of all IT equipment ensured that installation and training of health workers.

Building for the Future

The MoHCC has developed a three year action plan to scale up the initiative further and to guide the roll-out of DHIS-2 to health facilities even in the more remote parts of the country.

> *"It is crucial to continue investing in an efficient routine health management information system. This is strategic at facility level, policy level and at individual level. For the individual, it supports not only the patient's profile and treatment needs for clinical decision-making purposes but also for public health needs supporting the revitalisation of fundamental elements of primary health care such as community participation."*
>
> Dr. David Parirenyatwa, Minister of Health and Child Care

Support to Zimbabwe's response:
UNDP, the Global Fund and Partnership

The UNDP-Global Fund Partnership

Since Global Fund grants began in Zimbabwe, three different national organisations have held the Principal Recipient (PR) role. However in 2008, the Global Fund placed Zimbabwe under their Additional Safeguards Policy (ASP), which is invoked to ensure accountable use of Global Fund financing. Under this policy, the Global Fund Secretariat selected UNDP as the PR for Round 8 Global Fund grants in Zimbabwe. The Round 8 Grants had the following goals:

- To reduce the number of new HIV infections among adults and children as well as morbidity and mortality due to HIV and AIDS in Zimbabwe.

- To reduce the malaria incidence to less than 2.5% by 2016.

- To reduce the burden of Tuberculosis by 2015 in line with the Millennium Development Goals and Stop TB Partnership targets.

- Enhanced capacity of the health system to deliver effective scaled-up treatment for HIV, Malaria and TB.

Overall, the Global Fund has provided about US$950 million to Zimbabwe's response to the three diseases. Since UNDP was the PR, the Global Fund grants in Zimbabwe have been consistently high-performing and have achieved significant results in scaling up access to life saving services that have benefited millions of people.

- In 2013 three out of four grants recorded 'A' ratings (the highest grant rating) with the exception of the TB grant that recorded B1 ratings in one quarter

- In 2013 Zimbabwe was one of the pilot countries for the Global Fund New Funding Model (NFM). This was heralded as a highly successful pilot in rolling out the NFM and is being used as a best practice case in other countries. Quality data and national planning contributed towards this success.

- In 2013 the first grant under the NFM was approved for HIV and is now being implemented.

- In 2015 the TB and Malaria Round 8 will be replaced with new grants recently awarded under the New Funding Model.

The Ministry of Health and Child Care (MOHCC) is responsible for the delivery of health programmes in Zimbabwe and as such plays a key role for the implementation of Global Fund grants. The success of the programmes also depends on the support from technical partners such as WHO and UNAIDS and the collaboration of development partners.

UNDP has a dual role: Firstly, UNDPs role is to function as interim PR of Global Fund grants supported by national entities as SRs. Secondly, UNDPs role is to support the strengthening of capacities of the national entities and systems involved with implementing the national programmes and Global Fund grants, preparing the country for transition to national management and ownership.

UNDP also works closely with both government and development partners to establish a strong multi-sectoral response. As the interim PR, UNDP has been a key convenor of different actors, helping to create alliances and networks, and has set out a systematic approach to strengthen the health system. This has been supported by the Global Fund and delivered in collaboration with other technical partners.

Partnershipfor the DHIS

The success of the development of the country Health Information and Surveillance System has been significantly enhanced by the partnership and collaboration between UNDP, the government, and other donors and technical partners.

DHIS-1 was supported by UNDP and the Global Fund (GF), the Centre for Disease Control (CDC), through the Research Triangle International (RTI) Project and UNFPA funding.

The upgrade to DHIS-2 in 2013 was also supported by UNDP and the Global Fund, the Health Transition Fund (implemented by UNICEF) and PEPFAR (through CDC, RTI and the University of Zimbabwe Department of Community Medicine Surveys, Evaluations, Assessments and Monitoring (DCM-SEAM)). The University of Oslo (UiO) who is the originator of the system, provided technical support to the roll out of DHIS-2.

This support has included the development of national and sub-national databases that enable stakeholders to access relevant data for policy formulation and program management and improvement; support to build and strengthen surveys, evaluations, program assessments and monitoring, and capacity building of healthcare practitioners and policy makers thus ensuring country owned and sustainable systems. The success of this health systems strengthening project is a good example of collaboration between all partners.

Sources

This case study is based on a number of interviews with actors in Zimbabwe's health sector, conducted in 2014. Information from the interviews was supplemented by data from the following reports and data sources:

Health Management Information System (HMIS)/DHIS, MOHCC

http://portfolio.theglobalfund.org/en/Country/Index/ZWE

http://www.zw.undp.org/content/zimbabwe/en/home/presscenter/articles/2014/02/04/boost-to-health-care-as-new-technology-is-unveiled/

Insight – Newsletter of the Global Fund Programme in Zimbabwe, UNDP, March 2014

Newsletter of the Global Fund Programme in Zimbabwe, June – October 2013, UNDP

The Global Fund Programme in Zimbabwe – 2012 in Review, UNDP

Ministry of Health and Child Care, National Health Information Strategy 2009-2014