IMA WORLD HEALTH

UKaid from the British people

DHIS2 in the Democratic Republic of Congo

ASSP and ASSR - 2013 to 2022

AVERAGE NUMBER OF HEALTH FACILITIES WHOSE SNIS REPORTS ARE CAPTURED USING DHIS2, BASELINE TO END DURING ASSP.

	Baseline	Project End
Planned	0	1,704
Achieved		1,692
% of milestone		99%

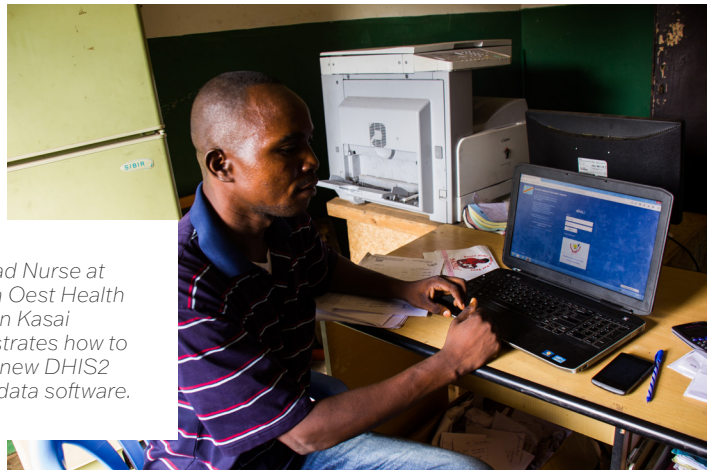
PERCENT OF HEALTH ZONES WITH A DATA QUALITY SCORE OF 80% OR MORE AT THE END OF ASSR.

106%

DIGITZING ROUTINE DATA COLLECTION

INTRODUCTION

DRC, like many developing countries, has a long history of health management information systems, which started in the colonial period with the Cahier Bleu system. In the 1980s the government created a system of decentralized health zones and the Système National d'Information Sanitaire (SNIS). Projects such as the SANRU I Basic Rural Health Project and Santé Pour Tous assisted the Ministry of Health (MOH) in setting up an integrated paper-based system to collect health statistics at the health facility level and to aggregate them by health zone at least once a year. The systems were rudimentary compared to today's systems, but they began to provide limited information for improved monitoring and management. More initiatives soon followed with funding by various donors with similar objectives and with similarly good intentions, including GESIS (Gestion du System information Sanitaire), to facilitate the electronic compilation and aggregation of paper-based health facility data at the health zone level, and with subsequent exportation of data to higher levels for further analysis and evidence-based decision-making. However, after 10 years only 35 percent of



The Head Nurse at Kalonda Oest Health Center in Kasai demonstrates how to use the new DHIS2 routine data software.

health zones had implemented.

In 2006, IMA World Health, as part of managing the USAID-funded Project AXxes, devoted several years of effort in implementing SNIS using the GESIS platform. SANRU was one of three implementing partners working with IMA to implement those efforts by training regional and health zone personnel. These efforts included providing laptops with built-in WAN card capability to access the Internet and to transmit data using a local SIM card and phone communications. Despite these efforts, by 2009, in order to meet the USAID requirements for rapid and quality reporting, IMA was forced to look for a more effective reporting platform.

DISTRICT HEALTH INFORMATION SYSTEM 1.4

DHIS software was developed by the Health Information Systems Programme (HISP). The DHIS 1.4 platform was developed to be fully "open source" and provided more flexibility in terms of customization and data analysis. With assistance from HISP consultants, within six months the DHIS1.4 reporting system was successfully customized to SNIS, installed, and effectively used in nearly all of the 57 AXxes-assisted health zones. Implementers at all levels were pleased with the ease of implementation, the rapid processing of data and the resulting improved data quality. It was IMA's recommendation and plan to continue use and expansion of DHIS as part of the AXxes follow-on project. However, Management Sciences for Health (MSH), the agency selected by USAID to lead the subsequent project, opted to not use the DHIS platform.

Meanwhile, NHIS decision-makers in Congo were faced with whether to invest more time, money and energy in once again trying to upgrade the existing GESIS platform and expanding its use to more than 300 additional health zones, or to invest in a "replacement" platform for NHIS. This consultancy mission was designed to help the MOH look beyond a re-investment in GESIS by examining the experiences of South Sudan, where IMA, once again in collaboration with HISP, introduced DHIS 1.4 into its SuddHealth project in Upper Nile and Jonglei states of South Sudan. Within one year, the MOH of South Sudan not only fully embraced the DHIS approach, but also adopted it as the platform for their NHIS.

TRAINING IN SOUTH SUDAN

In May of 2012, IMA staff with MOH journied to South Sudan to learn about their experience in using DHIS to reinforce NHIS at various levels, from data collection in health facilities to data aggregation by NGOs to reporting by County and State Health Teams.

The Government of South Sudan had successfully integrated the DHIS 1.4 platform to reinforce its NHIS in an incredibly challenging environment. This required time for full implementation, yet with only two years of implementation Africa's youngest country had emerged from having no health information system to establishing a viable and growing NHIS. The GoSS-MOH could now, thanks to the assistance provided by IMA and HISP, produce monthly and annual statistics.

These achievements were possible because of the following strategies:

Government leadership includes regularly financing health activities.

Governance mechanisms are coherent and strong.

Health partners consensus on unique list indicators to be used countrywide.

Adoption of a unique data warehouse platform to accommodate multiple interconnected databases (Routine, EPI, vertical programs data).

All health partners, including WHO, supported the implementation of the adopted platform and use it effectively for health activities planning.

ADOPTION OF DHIS IN CONGO

STAKEHOLDER BUYIN

After their return home, the DRC team (IMA and MOH) convened a series of meetings with stakeholders to share the South Sudan experience and explore the way forward to improving DRC NHIS. Participants expressed an almost unanimous opinion that it was time for the MOH to seriously consider adopting a new health information platform, like DHIS2, that could provide a more efficient system for SNIS and one that would include advantages in terms of interface requirements, functional capabilities, performance level, safety, and reliability. The fact that DHIS 1.4 had already been successfully piloted by IMA in 57 health zones assisted by Project AXxes reinforced the feasibility of this approach.

The participants also agreed on the necessity to have the governance in place to effectively support the roll out of a new software platform for the NHIS. At the end, the group decided that further discussion involving not only the government but also donors and others health partners would determine how the country would handle this new direction and transition.

PILOT PHASE

After the adoption of the new normative framework based on DHIS 2.0, IMA started introducing DHIS2 in the provinces and helth zones during its new health systems strengthening project, ASSP. This introduction consisted of purchasing computer equipment (two computers per site), installation of VSAT plus solar panels, and training in DHIS 2. The training, called the Long Strategy, consisted of three phases that took place over eight months. The first phase provided basic training of DHIS2. The second phase lasted between three and six months and provided training on data encoding. The final phase provided training in DHIS data analysis.

Lessons learned during this phase:

Difficulties in maintaining internet connectivity with failures of either VSAT or panels

Insufficient bandwidth to run scans once encoded data increases

The single canvas was very heavy, poorly parameterized with many of the fields not applicable to the need to report structures with the consequence of encoding zeros 90%

Slow coverage of the Provinces in DHIS2 because of a very slow strategy.

A strong dependence on the outside for the maintenance of the system

The encoding of data by Health Area prevents the traceability of data that are produced at health facilities level.

EXTENSION PHASE

This phase had four important components:

HMIS Multi-donor project funding 2015-2017.

The integration of DHIS 2 in the remaining provinces.

The acceleration of the training of Nationals in DHIS 2.

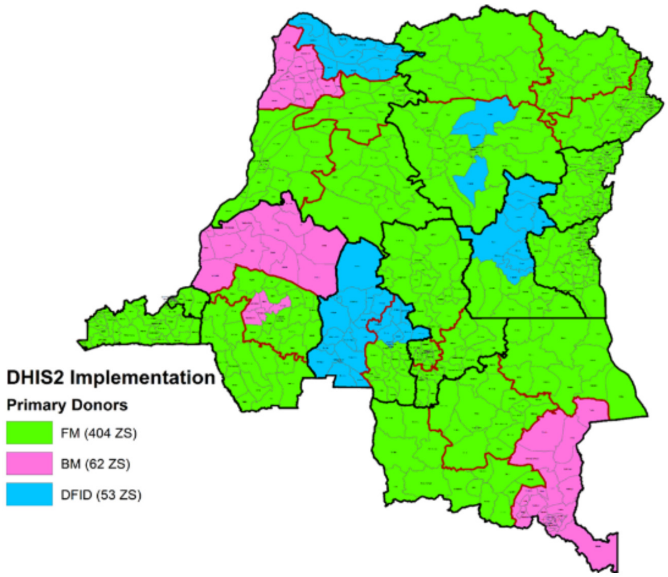
Simplifying SNIS to make DHIS 2 optimal.

HMIS MULTI-DONOR PROJECT FUNDING 2015-2017

The results of the pilot phase stimulated donors to pool efforts, which led to the establishment of a joint SNIS / DHIS2 financing project:

Access to Primary Health Care (ASSP) was funded by DFID/FCDO from 2012 to 2019. In this project there was a budget for the reinforcement of the SNIS in the Assisted Provinces and ZS and the central level HMIS Division. DFID provided $3,959,698 which 53 Health zone, 4 provinces and the HMIS Division, DHIS 2 Hosting, and contracting BAO and HISP South Africa. ASSP funded health zones are illustrated on the map below in blue.

Global Funding cycle 2015-2017, in the Malaria financing component provided an amount of $13,955,570 $, which supported



404 Health Zones, 20 Provinces and the HMIS division. Global Fund funded health zones are illustrated on the map below in green.

World Bank, under CFEF (Cellule de financement pour les etats fragiles), provided $2,298,147 which supported 62 Health zone and 3 provinces. Health zones funded by the World Bank are indicated on the map below in pink.

GAVI funded $6,090,700 for the installation of VSAT in all non-DFID Health Zones, plus connection cost and support of RDQA.

The RSS 1 project included two investments that could be capitalized in the HMIS project, especially the interconnection of the different MOH entities by the endowment of VSATs and the improvement of data quality for routine monitoring and routine data quality assessment.

Implementation Difficulties

Procedures varied from one donor to another without forgetting the interaction of the PR. (FM, BM, DFID, IMA, SANRU and CFEF), slow the availability of funds and equipment.

Direction d' Etude et de Planification (DEP) with the GAVI fund started installing VSAT in the last quarter of 2016 and ending in 2017 with interruption of connectivity funding around October 2017, the project was able to achieve results using modems.

World Bank fund became available around Mid-2016 causing a delay in implementation.

During implementation, GAVI Funds were frozen with no possibility to finance RDQA activities throughout the grant and non-payment of connectivity towards the end of 2017.

The intended fund available was used less than 55 percent.

THE INTEGRATION OF DHIS2 IN THE REMAINING PROVINCES

This phase unlike the pilot phase used a hybrid connection system, mixing the use of VSAT and 3G. The Long Strategy training was replaced by a short training of one week per province with three stages: Basic training, data encoding, and finally training on data quality and analysis. The prioritization criterion for implementation included: The availability of 3G, the interest of the provinces in using DHIS2, the amount of Health Zones in the province. This phase took 18 months, from July 2015 to December 2016. Divided in two-part rapid phase and final phase where the most challenging provinces were targeted

Two Strategies

To make the operation of VSAT efficient and thus give access to the Internet from the health areas of the republic for the proper use of the DHIS2 software; IMA Worls Health has developed Two strategies.

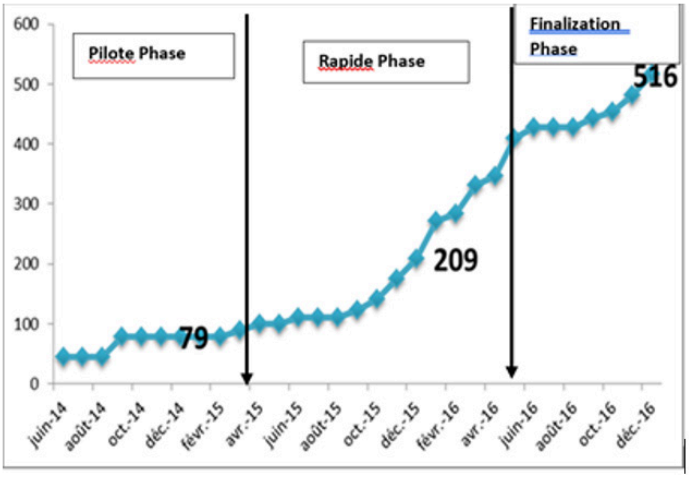
ONE: Training of Health Ministry officers at the national and provincial level, in computer network management and GVF (Global Vsat Forum) with as benefices

Reducing the cost or costs allocated for transporting technicians from Kinshasa.

Reducing the duration of the on-the-ground response in the event of a breakdown (Service-Level Agreement reduces).

The integration of basic maintenance in charge of provincial technicians

The appropriation of projects and the power tool and vsat as the local business first, then the national case and other after.



The protocol of communication and supervision between local technicians and the national supervisor has become easy and easy to speak the same technical language.

Investment in humans and at the grassroots level for the sustainability and sustainability of the project's achievements.

TWO: Improving the quality of electric power by installing:

Solar dc system that can only power the VSAT

kit (VSAT modem and router)

AC alternating current solar system to power computer equipment.

The selection and authorization of the four computers that are entitled to operate on the Health Zones network. This situation was imposed by the bandwidth of 512Kbps (download)/128Kbps (upload).

THE ACCELERATION OF THE TRAINING OF NATIONALS IN DHIS2

Beside BAO and HISP South Africa, ASLO was also contracted to train DRC Staff in DHIS2, at least every two months there have been training workshops by these different teams carried out here in Kinshasa. In addition, the staff of the DSNIS, IMA and SANRU have participated in study trips, conferences and DHIS Academies. To quickly increase the number of health staff exposed to high level training in DHIS2, three sessions of DHIS2 Academies were undertaken in DRC last quarter of 2020 and first quarter of 2021 and 160 health staffs participated. Currently many DRC staff are working in different places in HMIS/DHIS2 strengthening.

Integration of Specialized Programs in DHIS2

Integration of program data into DHIS2 software was possible due to the use of sections and modules in DHIS2. This practice provided more specificity to each data set, currently most of the programs are now integrated in DHIS2 or their software are interoperable with DHIS2. Currently most the programs are using DHIS2, currently any data base or application that should be used in DRC must be interoperable with DHIS2.

SIMPLIFYING SNIS TOOLS TO MAKE DHIS2 OPTIMAL

The final step was the simplify the SNIS tools in order to avoid duplication and provide a more efficient experience for the end user. Figure 2 illustrates the before and after of tools that were simplified during this stage.

CONCLUSION

DHIS2 is an open source health data management system used in more than 50 countries across the globe to collect data on national public health statistics. Timely and routine access to data is necessary for all health systems to improve decision making and guide equitable resource allocation.

ASSP/ASSR used a health system strengthening approach that identified stakeholder needs and capacity, then emphasized data quality and security to meet those needs. The focus was on the end goal: using data to improve planning, management, and health outcomes, including identifying and reaching indigenous and other vulnerable groups. One of the major achievements since ASSP is the scale up of DHIS2 integration country wide. To consolidate this result and improve data quality reported through DHIS2, a coherent package of activities was funded throughout ASSR:

Maintaining the functionality of VSAT which ensures unlimited internet connectivity.

Procuring health zones with SNIS tools.

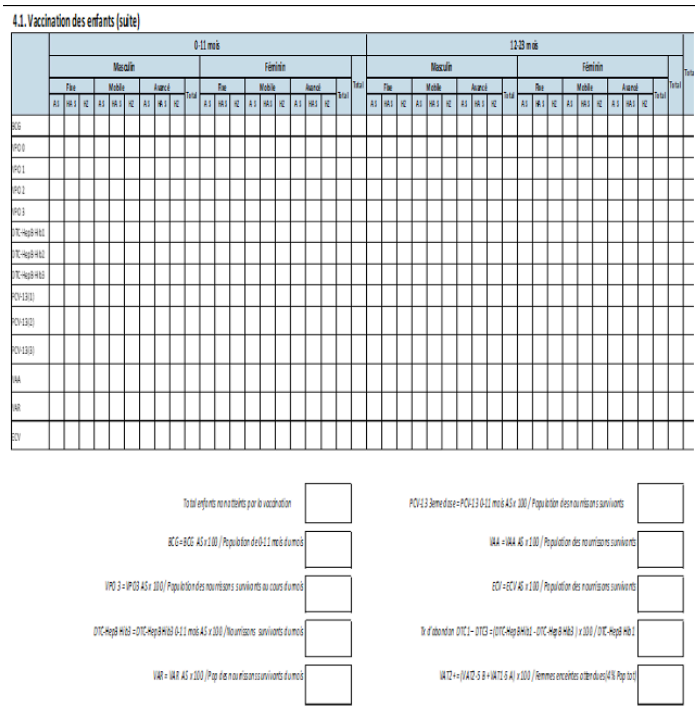
Supporting review meetings and regular SNIS meetings at provincial levels.

Supporting formative supervision.

This comprehensive HMIS support aimed at improving the timeliness, completeness and quality of data reported through DHIS2. Cost for this comprehensive support was a total of £678,663.18. Approximately 25 percent of this total was spent supporting health zones to improve their data quality score, or £12,724.93 per health zone.

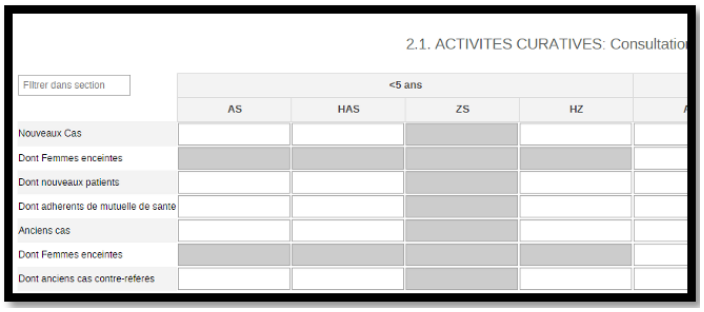
Figure 2. Examples of tools before and after simplification.

A. Vaccination data entry tool before simplification



B. Vaccination data entry tool after simplification

A. Curative consultation data entry tool before simplification



B. Curative consultation data entry tool after simplification