

Internal report

Local assessment of the pilot project for integration of NICT in the fight against HIV/AIDS

**based on questionnaires from December 2007 and from elements gathered
by DSF and NFAT coordinators in August 2008**



Digital Solidarity Fund

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1. Methodology and documentation

The local evaluation procedure started in December 2007 with the organization of three monitoring and assessment meetings for the pilot project for integrating NICT in the fight against AIDS in Bujumbura, Gitega and Ngozi. In addition to the three participating organizers from the DSF and the local coordinator Jean-Paul Nkurunziza, these meetings brought together 23 local participants, 10 at Bujumbura, 6 at Gitega and 7 at Ngozi

During the meetings three different types of questionnaires, designed to reach three target groups of people were distributed: the care staff, the participants in the fight against HIV/AIDS and the beneficiaries of the services of the associations concerned. These three page questionnaires include questions divided under the headings of personal data, telemedicine, distance learning and NICT centre for the first two types, and personal data, medical support, social support and NICT centre for the questionnaire aimed at the beneficiaries. These questionnaires have been completed anonymously.

The documentation comprises 48 completed questionnaires, that is 11 for Bujumbura, 15 for Gitega and 22 for Ngozi. It breaks down into 15 questionnaires for care staff, 13 for the participants in the fight against HIV/AIDS and 20 for the beneficiaries.

Documents	Bujumbura Gitega Ngozi			Total	
	SEP-CNLS	ANSS	SWAA Kiremba		
Interim report	1	1	1	1	4
nb of participants at meeting	10	6	7	0	23
nb of questionnaires from care staff	7	3	5	0	15
nb of questionnaires from participants	2	1	10	0	13
nb of questionnaires from beneficiaries	2	11	7	0	20
total questionnaires	11	15	22	0	48

In view of the relatively low numbers, no statistical analysis can be carried out and only the detailed breakdowns and summaries of remarks allow us to create an idea of local perception of the NICT integration project in the fight against AIDS.

Moreover, the interpretation we can give to the answers to these questionnaires is limited by several confusions on the part of some local participants in distinguishing between telemedicine and distance learning, between continuous distance training and academic distance training, between the association's NICT centre and the cybercafé or even between changes in the quality of care since the introduction of the NICT and changes in the quality of care since the introduction of ARV (Anti-retroviral therapy). Despite these limitations, this assessment is informative on more than one level.

Finally, this assessment has been carried out approximately one month after the training of the care staff, which was given in Bujumbura by doctors from the University Hospitals of Geneva, in charge of telemedicine and from the NFAT at the start of November 2007. This short time should be taken into consideration in interpreting the figures regarding the use of telemedicine taken from the questionnaires.

For a better analysis of the situation, we have therefore added a paragraph making an assessment of the use of telemedicine in August 2008, that is nine months after the training workshop and three months after the connections ceased to be financed by the DSF, from data supplied by the local coordinator Jean-Paul Nkurunziza and by the NFAT coordinator Cheikh Oumar Bagayoko.

2. Analysis of the questionnaires from December 2007

- Personal data :

The questionnaires have been completed, 71% by women and 73% by people aged between 30 and 49. Only 3 people out of the 48 are aged over 50.

The represented care staff is made up of 6 doctors and 9 nurses, whereas the participants in the fight against HIV/AIDS comprise 7 health professionals (nurse, social worker, psychologist, economist), 4 administrative people (secretary, administrator, coordinator) and 2 students. In 75% of cases, the employer is the association in charge of the project. Only 3 members of the care staff represented are employed by a hospital. The other employers mentioned are the civil service, the general management of penitentiary affairs and an unidentified institution. The question of profession has not been put to the beneficiaries.

All the beneficiaries are regularly monitored for medical care by a doctor, as well as by another member of care staff (nurse or nursing auxiliary) mainly at the association (18 and 17 cases respectively out of 20), and secondly, at the hospital (4 and 5 cases respectively) or in another institution (1 case). In 17 out of 19 cases (this part of the questionnaire is missing for the 2 beneficiaries from Bujumbura), the beneficiaries gain social support, mainly at the association, and in two cases at the hospital. The nature of the support enjoyed by the beneficiaries is variable, they mainly relate to medical support (14 cases) and psychological support (9 cases), but also advice on behaviour (4), nutritional assistance (2) or financial help (2), orphan support (2), professional training (1) and religious support (1).

- Telemedicine

Following confusions between telemedicine and distance learning in the questionnaires of the care staff, we have put together analysis of the replies from the two headings and tried to encompass both.

In the field of teleconsultation, two members of the represented care staff had the opportunity to carry out a teleconsultation, one from Bujumbura and the other from Gitega, in both cases with a doctor from Geneva. Among the beneficiaries, three have had the chance to take part in a teleconsultation, one at Gitega and the other two at Ngozi.

In the field of continuous distance training, more than half (8/15) of the care staff and 5 out of 13 of the participants in the fight against HIV/AIDS are taking continuous distance training via weekly remote teaching broadcasts by the NFAT. In the few weeks following the training which was broadcast locally, about twenty different courses have been taken in the following areas: monitoring and care of people living with HIV/AIDS, chronic dermatosis linked to HIV/AIDS, opportunistic infections to HIV/AIDS, microbicides and HIV/AIDS, treatment of HIV/AIDS infection in Senegal, sexually transmitted infections, reproductive health, Paludism and pregnancy, vaginal thrush, digestive blockages in children, Leishmaniasis, diabetic comas, care of diabetes in Madagascar, care of strokes, deep vein thrombosis, osteoarticular tuberculosis, hospital management, ways of decentralizing access to care etc. These continuous distance training courses have been followed from three sites, but mainly from Gitega (at least 13 courses have been taken), and Ngozi (at least 9 courses taken), whereas only one course seems to have been taken from Bujumbura.

In the area of academic distance learning, none of the people questioned seem to have taken or obtained a diploma or certificate. Two participants in the struggle against HIV/AIDS from Ngozi indicate that they have followed this type of training and obtained a certificate but it was IT training to master Word and Excel software and it is more likely that it was local training rather than distance learning.

Finally, 24 out of the 28 people questioned say they plan to take a distance learning course, although, for all that, we cannot know if it is weekly continuous training or academic master's training. The usefulness of such a training scheme for professional development has been offered in a rich and varied but convergent fashion, by the care staff and by the participants in the fight against HIV/AIDS, reflecting high expectations. According to them this type of training scheme will enable them to improve, enrich, strengthen or acquire new knowledge, improve services, strengthen abilities, perfect data handling, monitoring and care of patients and management of stocks as well as change behaviour, keep abreast of medical news, get to know other countries' medical practices, exchange knowledge, increase the value of work carried out by research in public health or in epidemiology, or monitor patients at a distance.

Among the beneficiaries of the associations' services, 12 out of 20 are aware it is possible to organize distance training or consultations with the hospitals of the capital or from abroad.

Regarding the influence of telemedicine on professional practice, more than 80% (23/28) of the people questioned replied favourably. The main arguments put forward are as follows: the exchange of experiences and practices, discussion of difficult cases for improved care or the search for a suitable solution, the ability to access a specialist, strengthening of colleague relationships, strengthening of professional abilities, updating, enriching or strengthening knowledge, acquisition of new skills, learning about medical practices in other countries and knowing how other services are organized.

A majority of beneficiaries (13/20) say they have noticed a change in the quality of care since the possibility of telemedicine has existed, but numerous beneficiaries have mixed this up with the introduction of ARV (anti-retroviral therapy). Thus, only 5 positive responses (3 in Ngozi and 2 in Gitega) clearly relate to an improvement in the quality of care services linked to telemedicine, with relevant arguments listing fewer trips for medical supplies, comparison with similar cases documented elsewhere, the application of knowledge acquired during continuous distance training or the general improvement in awareness of services following these training sessions.

Finally, here we have brought together, by target group, the various suggestions, comments, criticisms and needs mentioned under the headings of telemedicine, distance learning and general comments and slightly reorganized them for clearer understanding,.

Remarks from care staff: Telemedicine is useful for both care staff and patients. Sometimes it removes the need for travel abroad, contributing to the development of medicine in Burundi and it frees up isolated practitioners. Distance training enables them to meet their obligations, without interrupting their work, and it requires few resources, enables several people to be trained at the same time in different places, enhances skills and is useful for acquiring other techniques and knowledge.

Remarks from participants in the fight against HIV/AIDS: Being able to access the internet is a great opportunity. Telemedicine enables many people to be trained without significant financial resources. This technology has become necessary to train and inform the participants in the area of the worldwide scourge that is AIDS. It gives beneficiaries access to quality services.

Criticisms from care staff: Distance training lasts a long time, we only see cases from elsewhere, it is difficult to follow the sessions due to poor environment or interrupted reception, technical monitoring is difficult.

Criticisms from the participants in the fight against HIV/AIDS: The connection is not permanent and the broadcast quality is disturbed by poor climate. The number of machines is

insufficient given the number of beneficiaries. Monitoring distance training is more difficult than direct training when answers to questions are needed quickly.

Needs of care staff: An increase in the number of training centres is needed to facilitate access for the population, to make hardware available, to connect all the computers for coordination at a national level, to have a reliable internet connection available, to extend the connection to different care structures, to create several functional telemedicine networks, to develop the network in Burundi to learn about interesting local cases and make them known elsewhere, to be networked with structures practising telemedicine, to make distance training accessible to all medical staff who want it, to extend the training on use of these new technologies to other participating doctors and nurses, to multiply the telemedicine sessions, to make available a programme of remote consultations to know who to turn to and when, to be able to ask questions for clarification, to make certificates available.

Needs of participants in the fight against HIV/AIDS: More computers are needed for staff, all centres need to receive the equipment required for following distance training, all machines need to be connected and it is necessary to avoid power cuts and connection failures, to have regular support from the DSF to ensure functioning and maintenance, to organize induction sessions so that the beneficiaries can seek out relevant information on websites, to organize continuous training in information technology, to diversify the types of training and not to limit them to the medical field, to facilitate access to connected sites, to issue certificates as a means of encouragement.

NICT centre:

The heading “NICT Centre” has been misunderstood in some cases, there being confusion between cybercafé, the association’s IT infrastructure and the association’s premises or services. Thus, the care staff from Bujumbura and from Ngozi have indicated no visits to a NICT centre, considered as cybercafé, as they all have access to a connected machine at their workplace and are active in the field of telemedicine.

The result of this confusion is that only 3 out of 15 members of the care staff, 9 out of 13 of the participants in the fight against HIV/AIDS and 7 out of 20 of the beneficiaries say they have visited a NICT centre. The first two categories of people consult the NICT frequently, that is twice (2 cases), 3 times (2 cases), 5 times (5 cases) and more than 5 times (2 cases) a week, whereas the beneficiaries consult it less often, that is twice a week (1 case) and between 1 and 3 times a month (4 cases).

For all categories of people, the most frequently used applications are E-mail (18 cases), then research on the web (12 cases) and finally use of MS Office (6 cases) and databases (5 cases).

The professional usefulness of NICT is accepted by 4 care staff members and 9 participants in the fight against HIV/AIDS. For them, this new technology constitutes a daily work tool, enabling improved effectiveness in daily activities, speedy report editing, documentation of services, successful conservation of documents, speedy delivery of reports and receipt of feedback, obtaining recent information in the participation in the fight against HIV/AIDS, research for documentation on the internet and downloading of documents, consultation of databases, access to a lot of information, closer following of news on psycho-social and medical care, enrichment of professional relationships, speedy resolution of health problems, access to distance learning, communication and exchanges with professionals, asking health professionals from abroad, (Africa, Europe), questions on a clinical case, maintaining contact with partners. The internet is like a mobile library, a source of information and updated data for several pathologies.

The personal usefulness of NICT is recognized by 6 care staff members, 9 participants in the struggle against HIV/AIDS and 6 beneficiaries.

For the first two categories of people, the useful areas are mainly linked to communication made easier by E-mail: NICT enables exchange of E-mail messages with family and friends, easy long-distance communication between colleagues and friends on all subjects, communication by Skype, an increase in the number of contacts in the country and abroad, rapid, discreet and inexpensive communication with acquaintances, speedy work, continuous training in all areas and following the news. One of them even sees a financial benefit, being paid by the cybercafé on the basis of 40% of admissions.

As far as the beneficiaries are concerned, they put more emphasis on consulting the web on the subject of AIDS. They say that access to NICT enables them to obtain a lot of information on HIV/AIDS, influencing a change in behaviour, favouring self-care in people living with the AIDS virus, and improves knowledge in the area of prevention and patient care.

Remarks from the care staff and participants: We are well-served, the beneficiaries are confident because reports are faster, the staff is stronger, the centre has at least 5 clients per day and it is much appreciated by students preparing their dissertations.

Criticisms from care staff and participants: There is no local network, the connection is often disrupted or interrupted, the equipment often breaks down and repairs are slow, not all computers have a connection, the Internet is not accessible to all staff. There is a lack of training in IT, distance learning is very useful for the staff, but there are few subjects linked to HIV/AIDS. We are concerned about how long the centre will last.

Needs of the care staff and participants: This very useful tool should be extended to more users and to all institutions responsible for the fight against HIV/AIDS, there is a need to increase numbers of machines, to extend the connection to all computers, to support us with full-time equipment maintenance, to have a technician permanently present, to train people on the usefulness of the NICT and their use, to be better informed on NICT, to receive distance training for overall care of orphans and children infected with HIV/AIDS.

Remarks from the beneficiaries: The DSF project must be supported.

Needs of the beneficiaries: The internet should be more available at association level.

3. Assessment of the questionnaires

Local assessment of the NICT integration project in the DSF's fight against AIDS in Burundi takes account of the opinions of both men and women, of all age categories and from nine different professions, but it predominantly reflects the perceptions of women and young people, employed by the associations involved in the project or the beneficiaries of their services. It should also be made clear that only six doctors expressed an opinion and that was only one month after the training given to them in Bujumbura by telemedicine specialists from the University of Geneva.

All categories of people questioned use **new information and communication technology (NICT)**, whether it is in their workplace or at the cybercafé, this mainly being for sending E-mail and visiting websites, and to a lesser extent to use MS Office software and databases. The care staff and participants in the fight against HIV/AIDS use it more often (from 2 to more than 5 times a week) than the beneficiaries, of which more than a third say however that they visit a cybercafé once a month to twice a week.

In the area of **teleconsultations**, local assessment shows that already a month after training twenty doctors in the use of telemedicine tools, two care staff representatives, one from Gitega and the other from Bujumura, as well as three beneficiaries, one from Gitega and the other two from Ngozi, have taken part in a teleconsultation, of which several have taken place with Geneva.

In the area of **academic distance training** leading to a diploma or a certificate, the questionnaires indicate no training of this type. Nevertheless, we know that several young Burundian doctors have taken or are taking a distance learning master's course with French universities, one of them being present in Bujumbura during the telemedicine training workshop.

In the area of **continuous distance training**, nearly half those questioned among care staff and participants in the fight against AIDS have already taken courses on the NFAT and elsewhere, and this was from three Burundian sites. More than twenty or so subjects were listed, including several related to HIV/AIDS. More than 80% of those questioned say they plan to take a distance learning course. Where the beneficiaries of the services are concerned, more than half are already familiar with the possibility of benefiting from distance learning or remote consultations with the hospitals of the capital or those from abroad.

Where **the influence of telemedicine on professional practice** is concerned, more than 80% of those questioned think it is positive and a quarter of the beneficiaries have seen a clear improvement in the quality of care services following the introduction of telemedicine.

The NICT's main recognised **advantages** focus on the fact that it constitutes an effective daily work tool for recording services, editing reports, safely conserving documents, rapidly delivering information and accessing enormous amounts of information (the internet is a giant mobile library); it also enables communication with colleagues and specialists to resolve health problems quickly. On a personal level, it makes communication with family and friends easy, quick, discreet and inexpensive, and allows access to news in all subjects. For the beneficiaries, it gives access to abundant information on HIV/AIDS and helps to change behaviour.

As for the main recognized advantages for telemedicine, they focus on the fact that telemedicine helps the development of medicine in Burundi and frees up isolated practitioners by avoiding doctors travelling abroad, enabling several people to be trained at the same time, in different places, with few resources, or remote monitoring of a patient. Telemedicine also enables care staff to enrich their knowledge, acquire new skills, perfect data handling and monitoring of patients, keeping them up to date with medical news, exchanging experiences with specialists of the country or from abroad and strengthening colleague relationships.

The **criticisms** from the questionnaire largely focus on logistical and technical aspects such as the poor quality of transmission in bad weather conditions, the lack of a local network, the insufficient number of connected machines and the lack of regular maintenance. Criticisms also relate to the lack of information on NICT, the lack of training in its use and, for some beneficiaries, the greatest difficulty in obtaining answers either remotely or directly.

The principle **needs** mentioned state that NICT must be accessible to more users (medical staff, other participants, employees, students, beneficiaries etc) by increasing the number of computers and by extending a reliable internet connection to all care structures in the country. The needs also involve maintenance support and functioning and maintenance of infrastructures. Finally, they focus on the need to organize induction sessions in the use of

NICT for beneficiaries and continuous IT training, with certificates being issued for encouragement.

The **result** of this local assessment based on 48 questionnaires shows firstly the relatively good level of knowledge and regular use of NICT, by both the care staff and those benefiting from the care, by both men and women, in comparison with the situation in other countries of sub-Saharan Africa. It also shows that the majority of professionals understand the benefits of telemedicine. Moreover, it shows the strong motivation and quick mobilization of care staff and the participants in the fight against HIV/AIDS for continuous distance training. Finally, it illustrates the relevance of those benefiting from the services for telemedicine in its wider sense, in the idea of improved care and monitoring services.

4. Assessment of the situation in August 2008

In May 2008, six months after the telemedicine training workshop, subscriptions to the VSAT connection financed by the DSF expired. The price of this type of connection being much too high to be paid for by local communities, the DSF asked various bodies to find a local operator to set up less costly WIFI connections.

To date, only the CNLS site of Bujumbura benefits from a 380 Kbps WIFI connection, by the operator UCOM, co-financed by the CNLS and the DSF for 6 months. This connection is shared by the secondary SWAA sites and the National Reference Centre for the fight against AIDS (NRC), but the quality is poor.

The sites of Gitega and Ngozi have had no connection since May 2008. Indeed, the only Internet operator able to supply a reliable connection is UCOM, but it has not yet brought WIFI to these towns and the only technology possible is the CDMA. The DSF has promised to purchase six lots of CDMA equipment for Gitega and Ngozi but funds have yet to become available.

Between November 2007 and May 2008, the care staff began to get used to using quality communication tools and to developing telemedicine activities. Between 10 and 20 teleconsultation cases were posted from Burundi on the i-path platform, mainly from the hospital in Ngozi, but also from Gitega and Bujumbura. After the connection was cut in May, one Ngozi doctor continued to put cases on line by paying himself in a town cybercafé connected by VSAT .

At least four doctors took specialized academic distance training courses, but some had to stop when the VSAT connection was cut and others have to go to the digital French-speaking campus to be able to keep up their training.

Before the month of May, each e-class broadcast by the NFAT, two per week, was followed by Burundian health professionals, in particular very regularly from Ngozi. Several courses were also re-broadcast, aimed at other doctors in Bujumbura on CNLS, at the Faculty of Medicine and at the NRC. Since May, the connection is too weak or non-existent and the numbers following continuous training from NFAT from Burundi have fallen.

The connections no longer being financed was deeply disappointing and hugely discouraging for the health professionals of Burundi, who had just started to master the tools and to seek finance from other partners. For example, this is the case for the hospital in Ngozi, which benefited from the VSAT connection from January 2008 and had made contact with Italian partners to obtain the means to install a local network intended to make these infrastructures benefit a greater number of people.

According to the DSF coordinator at Bujumbura, it was a shame that the quality connection should be interrupted at the time when telemedicine activities with the NFAT began to get

organized and were increasing. The two main problems are as follows:

- The VSAT connections which were installed are good quality but financially inaccessible for local communities. Therefore there is an absolute need for support so that these communities may benefit.
- There is a lack of information in the communities on the benefits which these distance communication structures can bring. Awareness and demonstration activities are crucial.

As far as the NFAT coordinator in Geneva is concerned, the main problems remain access to a reliable connection, “which obviously often fails to function very well” and the professionals’ motivation to use these new tools.

5. Conclusion

Analysis of the questionnaires shows that the Burundi context is favourable to the development of NICT and telemedicine, as numerous motivated health professionals, on three sites, have quickly adopted the telemedicine tools presented during the telemedicine training workshop from the doctors of Geneva University in November 2007. The clear development of use of IT infrastructures installed by the DSF in the field of telemedicine following the training workshop confirms the importance of accompanying IT infrastructure development in Africa with strong support in the field of training and information.

The termination of finance for the VSAT connection in May 2008 has unfortunately broken the momentum and has slowed down and brought these activities to a halt, just as they were blossoming, and severely disappointed hopes on the ground. The sites outside Bujumbura are still awaiting a solution.

This experience shows that it is crucial that the roll out of technology in Africa is accompanied by strong support in the field of information, training and help in finding financial solutions to perpetuate the activity undertaken.

Review of the Burundi evaluation questionnaires

Personal data

heading	personal data	care staff	participants	beneficiaries	total	
corpus	corpus		15	13	20	48
genre	women		11	7	16	34
	men		4	6	4	14
age	20-29 years old		2	2	5	9
	30-39 years old		7	9	8	24
	40-49 yers old		4	1	6	11
	50-59 years old		1	1	1	3
	no answer		1	0	0	1
profession	doctor		6	0		6
	nurse		9	1		10
	social assistant			3		3
	psychologist			2		2
	economist			1		1
	student			2		2
	secretary			2		2
	manager			1		1
	coordinator			1		1
employeur	association		11	10		21
	hôpital		3	0		3
	autre		1	3		4

Telemedecine

heading	care staff	participants	beneficiaries	total	
documentation		15	13	20	48
teleconsultations practice		2	0		2
following distance learning courses		8	5		13
following distance training		0	2		2
obtaining a certificate		0	2		2
positive influence on practice		12	11		23
plans for distance training		13	11		24
knowledge of possibility of telemedicine				12	12
participation in a teleconsultation				3	3
notices a change since introduction of telemedicine				13	13

**Burundi
assessment**

Documents	Buja SEP- CNLS	Gitega ANSS	Ngozi SWAA	Kiremba	Bururi ADHES	Total
interim report number	1	1	1	1	0	4
participants at meeting	11	7	8	0	0	26
number care staff questionnaire	7	3	5	0	0	15
number participant questionnaires	2	1	10	0	0	13
number beneficiary questionnaires	2	11	7	0	0	20
total questionnaires	11	15	22	0	0	48