From Health Information System to Collective Intelligence:

Refocusing the health district on the population through ICT

Cotonou 16 - 18 December 2015

Report of the CoP HSD workshop

Community of practice "Health Service Delivery"

The Community of Practice "Health Service Delivery" is one of five knowledge and experience-sharing communities established under the Harmonization for Health in Africa initiative. It brings together experts involved in the strengthening of local health systems in Africa, mainly District Management Team but also health administrators, health policy specialists, technical assistants including those working for development partners. This workshop was conducted with the support of the United Nations International Children's Emergency Fund (UNICEF), the Center for Research in Human Reproduction and Demography (CERRHUD) in Cotonou-Benin, the Institute of Tropical Medicine in Antwerp, the Belgian Technical Cooperation and the French Fund MUSKOKA.

Avril 2016

How to cite this report

Touré C, Keugoung B, Dossou JP, Kiendrébeogo J, Meessen B (2016) From health information systems to collective intelligence : Refocusing the health district on the population using ICT. Regional workshop of the community of practice "Health service delivery". Cotonou, 16 - 18 December 2015. Available on: http://www.health4africa.net/wp-content/uploads/Report-2015-Cotonou-workshop-HIS-Final.pdf.

Table of contents

SUMMARY 3

INTRODUCTION 4

The implementation of the Dakar recommendations for strengthening the health district 4

The need for a new vision for health information systems 4

THE COTONOU MEETING – 16 – 18 DECEMBER 2015 6

The current HIS is inadequate 6

Towards capacity-enhancing solutions 6

But collective intelligence requires more… 10

Blueprint for a new conceptual framework 11

PRIORITY ACTIONS FOR ENHANCING INFORMATION SYSTEMS 12

OUTLOOK 13

ANNEX 15

SUMMARY

As part of the implementation of the recommendations of the Dakar Regional Conference on health districts, the Community of Practice " Health Service Delivery" (CoP HSD), with the support of its partners, organized a workshop in Cotonou. The main theme of the meeting was strengthening local health systems through new technologies applied to the health information system (HIS). Some sixty experts participated in this workshop. They included district medical officers, national directors, researchers, technical assistants, developers of technological applications and innovators. Together they reviewed ongoing experiments in Africa and discussed how HIS can improve stakeholder performance and the local health system as a whole.

The main objective of this workshop was the creation of a knowledge program for empowerment of local stakeholders through HIS. The discussions helped identify issues requiring further investigation and led to the development of an evaluation grid that helped understand how Information and Communication Technology (ICT) contributes to the objectives of the Harare Declaration. Last but not least the workshop generated a collective learning approach pinpointing underlying theories of change to solutions that are currently being implemented.

The event was preceded by a preparatory phase during which a number of CoP HSD experts got together to write on two working papers for the occasion. One dealt with the key features and operational issues of the health district in Sub-Saharan Africa. The other described an improved HIS. Some members of the CoP developed a new evaluation HIS grid relevant to their own local health system. The results of their discussions and working papers were shared with participants.

During the three day workshop, participants first tried to establish an understanding of how HIS works through a review of the key concepts of the performance of local health systems. They also made an in-depth analysis of the current use of technological tools that are available to the different stakeholders. They shared their experiences of systems' development and health information management tools.

In the course of the workshop, the experts concluded that the experiences presented had not provided an analysis, nor achieved a decision process at district level. They emphasized the low level of participation of local governments and the community in the development and operation of HIS solutions. The discussions helped highlight the need for new, more inclusive and better systemic analysis tools in order to understand the way HIS drives the dynamic performance of stakeholders in the local and national health system.

Based on all this, participants identified a number of principles guiding the development of HIS for the creation of an "intelligent" local health system. They also singled out high priority objectives (work schedules) that CoP HSD should endeavour to achieve in the future.

INTRODUCTION

The implementation of the Dakar recommendations for strengthening the health district

The Community of Practice "Health Service Delivery' (CoP HSD and its partner “Harmonization for Health in Africa” held a regional conference in Dakar in October 2013, to mark the 25th anniversary of the Declaration of Harare. More than 150 experts gathered to review the relevance of the health district strategy. On this occasion, participants reiterated the validity of the health district model and identified twelve priority areas which the stakeholders were asked to further develop. These commitments are part of a strategy whereby the health district operations focus far more on the service beneficiaries, i.e. the population. This objective is achieved through an empowerment approach, greater freedom of choice, accountability and a strengthening of expression skills.

The Dakar Conference identified several opportunities for new information and communications technology capable of facilitating implementation of this renewed insight. 12 priority areas were singled out. These focused on the use of ICTs to improve governance, accountability, equity, efficiency and effectiveness of local health systems. Partners were encouraged to lend support to the development of ICT solutions for African health systems. Another priority issue is the need for health systems and more importantly district management teams to rally behind the **learning organization model**, the only way to constantly adapt to an increasingly complex and changing environment.

Two years after this conference, CoP HSD wanted to investigate in more depth these two closely related recommendations. Their commitment was based on the vision that the huge potential of ICTs can only be fully realized if it is put at the service of decentralized health system stakeholders (district and health facility managers, users, communities and local authorities) and used for strengthening the **collective intelligence** in local health services.

The need for a new vision for health information systems

The performance of African health systems falls far short of what the population needs. This is not only due to substandard performance at various levels of the health system including the HIS, but also to deficient interactions between the various players. Challenges will only increase: an ever changing environment will constantly require greater responsiveness from the different factions of the system.

We argue that the prevailing vision for HIS is outmoded and primarily destined to facilitate decision making at central level and its main purpose is to trace data to allow steering from above. This vision must shift because steering from the top remains weak. The more fundamental issue then is that HIS has to become a tool of **empowerment, creating real involvement and advancement of all health system stakeholders**, particularly those who work at decentralized level.

ICTs offer new opportunities capable of realizing this vision. Implementation depends on evaluation and improvement of HIS to align them with these new insights. We believe a coherent conceptual framework for analyzing the transformation of HIS is needed. This framework should also enable analysis and guidance of the development and integration of ICT in HIS. It must 1) include the empowerment of individual stakeholders and 2) the system as a whole. In this regard, collective intelligence is an interesting concept (1,2).

Collective intelligence (CI) is intelligence that is widely shared, constantly enhanced, coordinated in real time, resulting in an effective mobilization of skills. Its basis and objective are recognition and mutual enrichment of people(1) .

According to Pierre Lévy this concept is based on 4 pillars:

- CI is distributed everywhere because it recognizes and involves bits of knowledge held by all individuals of a community, "no one knows everything and everybody knows something";
- As an emergent property of interactions between individuals, CI is constantly enhanced. It is in continuous expansion and towers above all individual intelligence. It explicitly or implicitly determines the effectiveness of groups in dealing with important issues;
- Real-time coordination of intelligence refers to the organisation of interactions between individuals who share events, decisions, actions. The mutation of these interactions in cyberspace, as created by ICTs, opens significant opportunities for optimising coordination in real time;
- The ultimate objective of CI is the recognition and enrichment of all. This includes technical, economic, legal and human enhancement of the intelligence shared by all in order to trigger a positive dynamic of acknowledgment and achievement of the common goal for the benefit of all(2).

This was the very objective that lay on the basis of our reflection on the Harare Declaration. The aim is the *empowerment* of decentralized stakeholders in the health systems as well as the effective involvement of skills of the entire population who feel responsible, involved and truly valued in the process of providing its own health care.

THE COTONOU MEETING – 16 – 18 DECEMBER 2015

The set up and implementation of a new vision needs to be carried out in stages. It is with this perspective in mind, that a regional workshop "From the health information system to collective intelligence: refocusing the health district on the population through ICT" was held in Cotonou from 16 to 18 December, 2015. Early December 2015, more than 1,300 members participated in the online forum. The event was organized by the CoP HSD and its partner "Harmonization for Health in Africa" and supported by the French Muskoka Fund (via UNICEF) and the Belgian Development Cooperation (through its framework contract with the Institute of Tropical Medicine Antwerp).

Sixty four experts took part. They included district chief medical officers, national directors, researchers, technical assistants, developers of technological solutions, and innovators. The list of participants is attached in Appendix 1. During the three day event, they shared experience and knowledge about the organization of HIS at their local level. The programme of the workshop can be found in Appendix 2.

The following sections give an overview of the highlights and key messages of the conference, including the results of the extensive discussions

The current HIS is inadequate

Initial discussions at the workshop confirmed the participants' frustration with present health information systems, which in many countries, mainly focus on requirements for information and reporting of those at central level (the Ministry of Health and technical and financial partners). Because of the still very hierarchical organizational set-up (community, district, regional and central), the actors at the decentralized level are primarily data producers. They are hardly encouraged to use the data they collect to either document their findings or to find solutions adapted to their specific context. The applications that best meet the needs of the central level are therefore those that receive extensive backing. They tend to be developed quickly but do not always integrate the needs of the local health system, the perfect and most efficient place to solve the population's health problems. Besides the hierarchical, bureaucratic and centralized issues at stake, there are technical challenges related to the nature and the mode of data collection, the inadequate analysis skills, the use, format and presentation of results, low level autonomy in decision making etc.

The pyramidal organization of the health system, essentially modeled on that of the public administration, is outmoded. The Dakar Conference noted that today's national health system is pluralistic and open. The traditional public sector actors are joined by an army of private stakeholders operating in an open geographic context in which administrative boundaries have but little effect. On a local level, the health sector as well as other sections of the community includes a multitude of skilled and unskilled public and private stakeholders and community actors. All these players coexist within the health district and have an influence on health. The current system is divided and poorly coordinated, resulting in a fragmented health information system.

Towards capacity-enhancing solutions

As part of the preparation of the Cotonou meeting, the CoP invited experts and organisations active at local health system level to participate and share technological solutions involving stakeholders at peripheral level. Participants were asked to describe how the information system they use, helps decentralised actors create learning organisations and how the system contributes to strengthen the collective intelligence at district level. To facilitate this critical analysis, the organizing committee had prepared two working papers, one on the characteristics and key functional elements of the health district in Sub-Saharan Africa and the other on an enhanced health information system[1].

[1] From HIS to collective intelligence: refocusing the health district on the population through ICTs

The first document, while seeking to demonstrate that investment in local health systems is not an ideological issue but a useful and necessary organisational model, described the characteristics and organizational structure of an efficient health district. It contains ten essential tasks that a health district should perform and a grid to evaluate the district's performance.

The paper dealing with the information system suggests we need to look beyond the obvious issues such as access and use of HIS, and focus on the objectives pursued by the various stakeholders that monitor their interaction in the local health system. It highlights the limitations of current analytical frameworks to embrace all emerging issues. The authors suggest that collective intelligence may be a way to meet everyone's needs through collective empowerment and propose a suitable framework for analysis, based on the publications of A. Sen on "capabilities" (an array of combinations available to achieve things that seem important). Finally this paper establishes an evaluation grid for an enhanced information system which enables **involvement, understanding, decision, action, evaluation and achieves the desired results**. These working papers were distributed to all participants prior to the workshop.

A great number of experiences were presented during the Cotonou workshop. They highlight the diversity of HIS projects and their impact on the various actors at all levels. Some of the projects are summarised below and the hyperlinks enable you to access the full text.

Telemedicine at the Ngoumou district hospital, Cameroon

This tool helps broaden the technical platform of a district hospital located in a rural area. The hospital received an ultrasound scanner and get help with the interpretation of the images from a specialist who resides in France and who provides "remote" coaching and supervision. This solution gets carers out of their isolation and gives them access to continuous training. The hospital for its part is able to provide the population with on the spot specialised quality services.

Djantoli: Home monitoring of children by mobile phone in Mali and Burkina Faso

This project aims to eliminate avoidable causes of infant death through a package of prevention services and community-based health insurance. Thanks to an app assisting the diagnosis and installed on their mobile phones, community volunteers are supported in their daily work by a doctor at the health center who can call in children displaying clinical signs of disease. This application allows a more effective coordination of tasks for medical staff and community workers. It also allows the caregiver to complete the medical records of the child at the time of consultation and access all routine data collected by community workers.

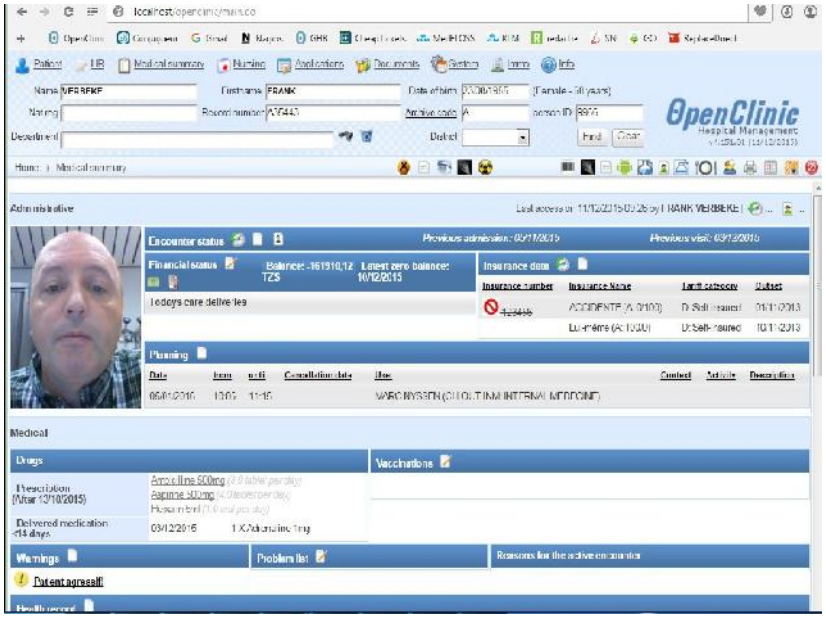
DataSanté: digitalization of medical records for integrated management in a primary care health centre in Mali

This is a digital project for first line health care activities in which electronic data are collected for all the services provided by the community health center. Patient management data are recorded in all units on a digital tablet and stored on a server. The information is available to the qualified staff at the different levels. Because health workers no longer have to manually feed medical data into the computer they have more time to carry out analyses.

OpenClinic : Integrated hospital management

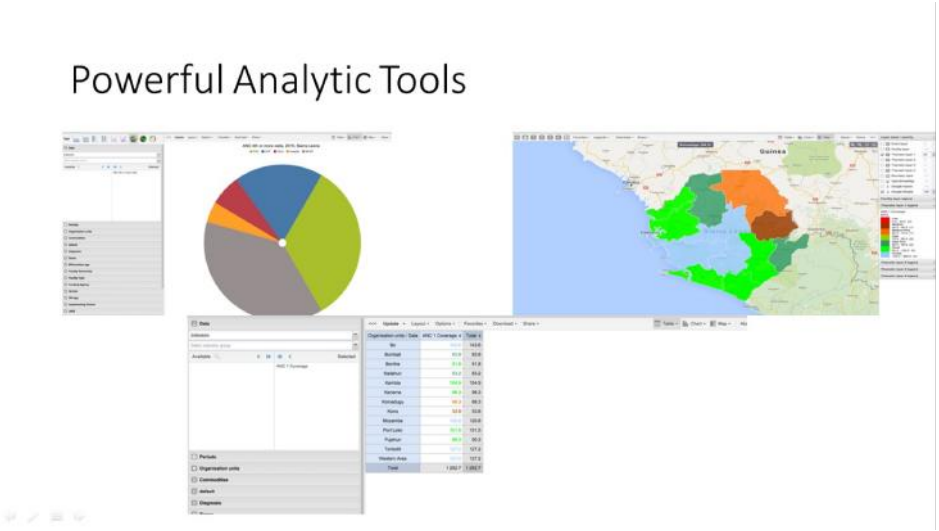
OpenClinic is an administrative, financial and medical management application for hospitals. It is an open source tool designed to interact with other programs. It operates in a web environment. The program stores information about

services provided in the various hospital departments and produces follow-up modules and a performance analysis including international hospital information comparisons. It facilitates the collection of routine data through automated extraction of statistics. OpenClinic reduces maintenance costs because it allows remote access over the internet (through a virtual private network – VPN).



District Health Information System 2 : management of routine health data

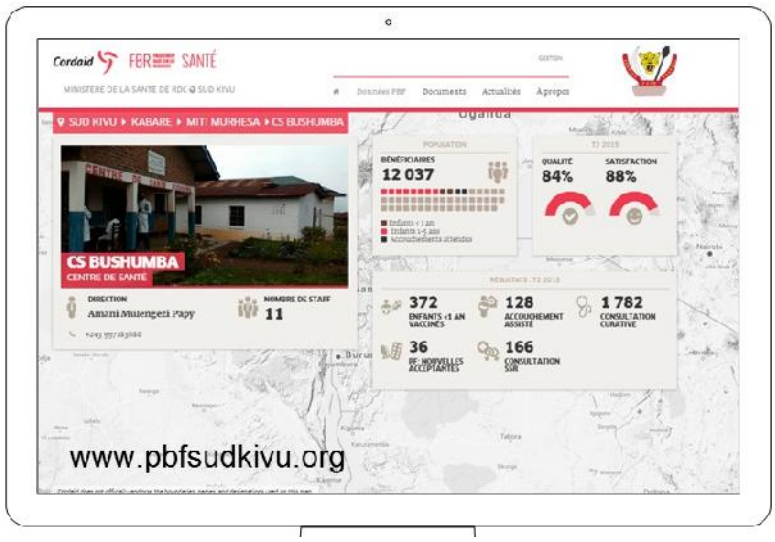
DHIS 2 is a free open source application for the capture, storage, analysis and retrieval of monthly routine health data. It is currently widely used in Africa and Asia. HID 2 archives historical data (per period) of activities carried out by health facilities and district teams. The stored data are geo-localised listings that facilitate the understanding of health phenomena and contextualize responses to identified problems.



Open RBF : Management of performance-based funding

This is a free open source application for storing data on the performance of health facilities that are part of a funding program based on results. It operates in a web environment. The data recorded are processed to calculate the remuneration resulting from the production of health services and based on pre-established scales related to appropriate

quantity and quality priorities. The allocated performance and compensation measurements are published on a site accessible to communities, providers, governments and donors. The application therefore offers greater transparency (accountability) of the health system to the stakeholders and its users.



But collective intelligence requires more…

All these innovative experiences create a real opportunity for the empowerment of peripheral players. During the workshop, we also found that **no one application had really managed to promote data analysis and decision making at district level and for its actors**. The poor involvement of local leaders and the community was yet another problem.

To get all stakeholders of the local health system involved in and united around the public interest requires strategic information. The information has to be analyzed, contextualised and steered towards the general needs. At the same time it needs to remain local and has to be presented in accessible formats. The workshop discussions suggest that the term "intelligence" in the Anglo-Saxon sense is better suited to this perception of health information.

The involvement of the actors probably requires that information is **shared** in an inclusive and empowering manner. This will give each stakeholder, regardless of his job level, access to all the information he needs in order provide individual as well as collective health.

In Cotonou, the participants pointed out that information is an essential ingredient in the *stewardship* of the local health system. Its ability to give momentum to a collective performance dynamic through the combination and interaction of knowledge of the different stakeholders seems therefore a crucial issue.

In the closing stages of the workshop, the participants identified some key principles that need to be respected if we want applications that enhance the intelligence of the local health system.

1. Any HIS application, whether it be data generated or information produced, must **enhance the specific role of actors in the local health system**. By actors, we mean, when appropriate, individuals (e.g. the doctor), teams (e.g. the staff of the health center) and the organisations (e.g. the hospital). This triple level requires special features in the technology component such as intuitiveness and user friendliness; transparency and openness to collaboration; ability to track and manage internal flows in the organization.

2 Any solution deployed must **strengthen connections and decentralise coordination between actors of the local health system**. It includes the different levels of care (community health workers, health center, district hospital) but also private stakeholders (clinics, etc.) and actors from other sectors whose actions influence health outcomes (education, agriculture, roads, water, sanitation ...), and last but not least users and households. Again, this ability to connect should stimulate balanced human interaction and allow a stable flow and inventory management regulating the performance of the local health system (e.g. referral and counter-referral of patients). Transparency should be favored unless it is in contradiction to the first principle.

3 Applications need to enhance the capacity of stakeholders **to facilitate centralized coordination of local health systems as well as the management of conflicts and tensions**. Indeed, principles 1 and 2 result in conflicting situations (for example, an ICT solution helping hospitals to maximize income may go against the welfare of other actors, some of the users and other more vulnerable health facilities). This requires those responsible for coordinating collective action to make informed decisions. Again, this principle calls for special attention to their ability to unite forces, benchmarking...

We believe that when an application contains these three components, even it is mainly technological (e.g. an ICT application) or has a significant human component (e.g. training in the use of a technological application), it can be seen as an ICT solution supporting collective intelligence. However the pursuit of these three principles must be supported by horizontal development rules.

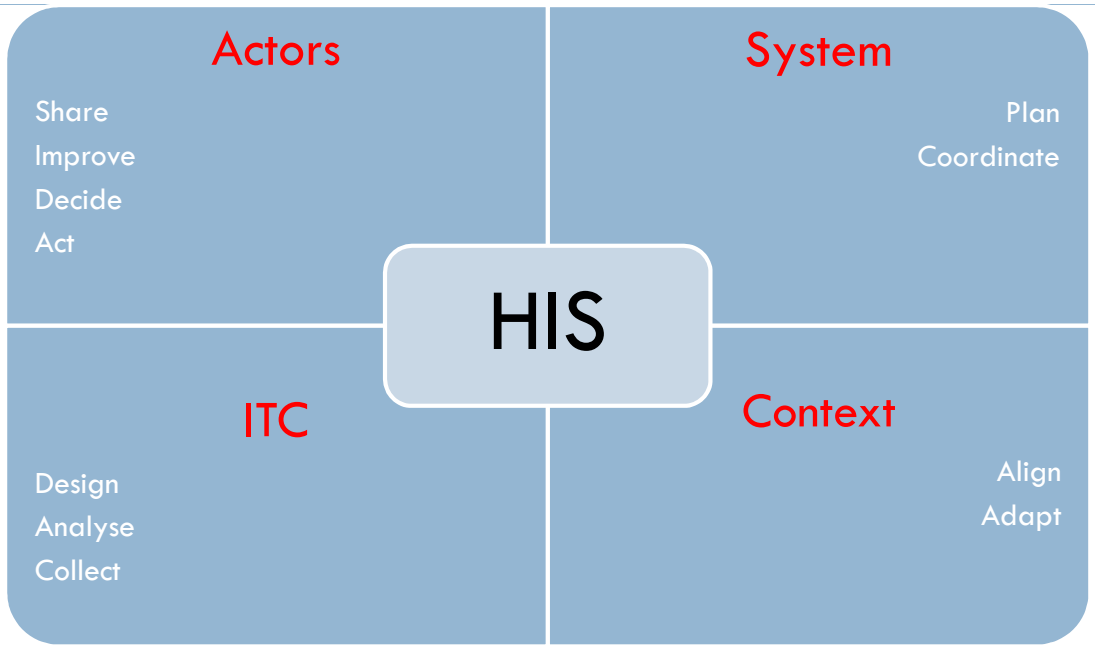
4 We should go for arrangements, rules and solutions that offer **real innovation possibilities**. We should thus be weary of technological applications of the 'owner' type and favor open source methods. One way to promote this would be to create opportunities for reusing data. We should in particular opt for a default open data rule combined with the promotion of continuous improvement of deployed applications and interoperability.

.

5 The **sustainability of applications** should be a constant concern that begins in the planning stages and requires in-depth reflection on relevant business models, ownership solutions by local actors, and alignment with national eHealth strategies. It is necessary therefore to identify the conditions for rolling out pilot experiences and introduce these already at the design stage.

Blueprint for a new conceptual framework

At the end of the workshop, participants agreed on the need to develop a more complete analysis framework for the future, taking into account the four dimensions (contextual, systemic, human and technological). Each of these covers all essential functions that should permit any enhanced information system to work effectively.



HIS - Mode of operation

The optimal operation of HIS remains dependent on the behaviour of actors in the health system, their attitude vis-à-vis health information and the value they attach to it. The retention of health personnel, intrinsic motivation, the perceived needs of care beneficiaries, availability of incentives, organizational culture etc. are all human factors crucial for understanding HIS operation.

But HIS activity cannot be separated from that of the whole system. The desired performance is connected to all the pillars of the health system, which not only have to be individually effective, but must operate in a coordinated manner to provide a comprehensive response to the health needs of the target population.

Also, an enhanced HIS is developed on the basis of relevant techniques and technologies. It is necessary to organize these so as to provide solutions that exactly match the expectations of actors in the health system. A thorough understanding of the aims and motivation of each of them is therefore of the utmost importance.

Finally the introduction of technology can only enhance the system's performance if it takes into account the contextual realities of the environment in which the HIS application is deployed, guaranteeing greater ownership and effective user adoption.

It goes without saying that the way in which these four dimensions interact harmoniously to instill a performance dynamic into the local health system needs further investigation which will be undertaken as a result of the present workshop.

PRIORITY ACTIONS FOR ENHANCING INFORMATION SYSTEMS

With this workshop, we discovered a strong innovation momentum in ICT solutions for the health sector. However, we have also identified weaknesses. These particularly affect actors in charge of the coordination of health activities at decentralized level, district-management teams but also local authorities.

The participants in the workshop identified several possible avenues for action. They feel it is necessary to acquire greater knowledge on (1) how to involve the district management teams in the design of HIS, (2) the design of interactive

strategies for actors of local health systems and (3) how to accelerate the dissemination and the scale up of ICT applications for healthcare professionals and households.

The participants have subsequently determined which activities they will concentrate on next:

1

Improved development of the local level

Many solutions still remain to be developed to help each player at local level in his/her particular field of action. The central level must recognize that supporting the emergence and dissemination of these applications also falls within its mandate. Participants noted that many of the applications tested locally struggled to get a foothold probably because the central level does not recognize the true value of the improvement made by these applications on a local level.

2

Systemic reach of deployed applications

The actors of local health systems are not really interconnected. Major efforts are needed at this level, also from developers of ICT solutions, who too often lack a systemic vision. It probably explains why their solutions are not adopted across the country.

3

Taking into account the needs of operational users

Better account should be taken of the needs of the district management teams and the local authorities when developing HIS solutions. Our recommendation to the Ministries of Health, and the promoters of technological tools, is to involve district management teams from the start (design phase), but also call on them repeatedly during the implementation stages. The inclusion of their information needs and an understanding of their routine will promote stewardship and decentralised use of information generated in general but also generated at local level.

4

Cross-learning

Listening to the district teams is not enough however. Another avenue for action would be to identify remarkable experiences in which the data generated are genuinely used for decision-making and to carry out an analysis (case study). This would enable detecting best practices which can in turn inspire application developers. The research should be multi-country and the development could be entrusted to experts from CoP HSD.

5

Knowledge update

It is essential to understand the process of national regulatory mechanisms in ICT development, the factors promoting the development and the testing of new solutions (e.g. open data, ecosystem and favorable financing mechanisms for startups), the challenges of implementing enhanced information systems and the conditions for their scale up.

OUTLOOK

The conference objective of the Community of Practice PSS was to initiate an agenda of knowledge about the way HIS leads to an improved performance of health systems. From this perspective, the Cotonou workshop has to be seen as a step in this process which will move forward in years to come. To achieve its objective, the CoP HSD will try and collaborate with partners willing to invest in this field.

Already the next activities will consist of:
A fine-tuning tools presented during the workshop and in the working groups. The framework analysis and the evaluation grid for improving the information system in particular will be further developed.

The inclusion of the integration needs of all stakeholders in the local health system in the design and implementation of HIS solutions. The logic is to create conditions for dialogue between developers and end-users. More specifically, we will organize hackathons in the various countries, a kind of competition in which

engineers develop software and technological tools adapted to the needs of local health system users. These needs will have been identified in advance and users can thus fully participate in a collective creativity.

- The development of knowledge dissemination platforms on good practices. Peripheral teams would submit their own experiences of using health data for decision-making. In practice this means that processes, tools, the way of using data for both operational and strategic decisions will be pinpointed. The best applications will be selected and shared on knowledge exchange platforms managed by the Community of practice.

- The implementation of operational and action research with all stakeholders to better understand how HIS can take full advantage of ICTs. Priority research topics are: national regulatory mechanisms in ICT, the terms of scaling up, the use of the locally produced information, the dynamics of implementing ICT solutions, the influence (positive or negative) of ICT on local health systems.

ANNEX

Annex 1: List of participants

Name	First name	Organisation	Origin
Ade	Nadège	Community of Practice "Evidence based planning"	France
Gamble Kelley	Allison	Community of Practice "Financial access to health services"	France
Pr Amoussou-guenou	Marcellin	Direction Nationale des Etablissements Hospitaliers	Benin
Kamugunga	Adolphe	Management Science for Health	Rwanda
Akpamoli	Alphonse	Projet : Strengthening health systems	Benin
Legrand	Antoine	Bluesquare	Belgium
D'Almeida	Vincent	IT and Pre-archiving directorate	Benin
Roos-Weil	Anne	Association Djantoli	Mali, Burkina Faso
Aziawa	Jerry	District Health Information System DHIS	Togo
Keugoung	Basile	Community of Practice "Provision of health services"	Cameroun
Meessen	Bruno	Institut de Médecine Tropicale Anvers	Belgique
Touré	Cheickna	Union Technique de la Mutualité	Mali
Diallo	Alpha Ahmadou	Ministry of Health	Guinea Conakry
Daouda	Sikirou	Clinique Tropicale Virtuelle	Benin
Dapo	Adejumo	District Health Information System DHIS	Nigeria
Doumbouya	Bangaly	Aconda HIV Programme	Ivory Coast
Etoa	Roger	Ngoumou district hospital	Cameroon
Pedro	Eunice épouse Fanou	IT and Pre-archiving directorate	Benin
Verbeke	Frank	Free University Brussels	Belgium
Goudjo	Fréjus	Health Zone Adjohoun-Bonou-Dangbo	Benin
Gbaguidi	Laurinda	Health Zone Cotonou 4	Benin
Gnanvi	Corneille	Livestock directorate	Benin
Ghesquière	Graziella	Belgian Technical Cooperation	Benin
Guezo-Mevo	Blaise	Bohicon health zone	Benin
Hounkpè	Virgile	Djougou/Copargo/Ouaké health zone	Benin
Sieleunou	Isidore	Montréal University	Cameroon
Kiendrébéogo	Joel Arthur	Centre Muraz	Burkina Faso
Dossou	Jean Paul	CERRHUD	Benin
Kashala Ilunga	Jean-Pierre	Belgian Technical Cooperation	Benin
Servais	Jean	UNICEF regional office	Senegal
Bello	Kéfilath	CERRHUD	Benin
Kanhonou	Lydie	CERRHUD	Benin
Sidikiba	Sidibe	Projet : Mobilisation 2.0	Guinea Conakry
Toko	Lucien	Directorate Public Health	Benin
Drabo	Maxime K.	IRSS	Burkina Faso
Makoutodé	Patrick	IRSP	Benin

Ag Ahmed	Mohamed Ali	Laval University	Mali
Rouve	Maxime	Institute of Tropical Medicine	Belgium
Nkaghere	Kevine Laure	CMA Congo 2 Douala	Cameroon
Nahounou	Noël	Abt Associates	Ivory Coast
Inginda	Olivier	AEDES	Benin
Ona	Ilozumba	Free University Amsterdam	Nigeria
Costes	Pierre	DataSanté Santé Sud Projet	France
Kahoun	Rodrigue	Porto-Novo - Aguégués - Sèmè-Podji health zones	Benin
Alidou	Sani Mala	AMGC/DataSanté N'Dali	Benin
Semegan	Barthélémy	WHO	Benin
Dr Goufodji	Sourou	CERRHUD	Benin
Adam	Zakillatou	National HIV and STD control programme	Togo
Begumisa	Godfrey	UCMB	Uganda
Duhimbaze N	Jenard	UCMB	Uganda
Odar	Micheal	UPMB	Uganda
Migan	Théotime	Directorate Public Health	Benin
Godjedo	Primous	Directorate Public Health	Benin
Dr Chaffa	Christian	General Secretary	Benin
Zountchem	Serge	Directorate of Programming and Forecasting	Benin
Kossi-Mazouka	Adolphe	Technical unit FBR	CAR
Bonezoui	Antoine Donatien	Ministry of Health	CAR
Dessouassic	Corneille	INSAE	Benin
Dr Hounye	Félicien	Independent consultant	Benin
Juquois	Maud	World Bank	USA
Sossou	Justin	Ministry of Health	Benin
Traoré	Mamadou	QUAHOR	Mali
Kaboré	Charles	QUAHOR	Burkina Faso
Bruneton	Carinne	Community of Practice E-Med	France