Strengthening Local Capacities to Create and Adapt Healthcare Information

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Neil Pakenham-Walsh

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FOREWORD

One of the strengths of new information and communication technologies (ICTs) such as the Internet is the way they can help unlock distant expertise, knowledge and markets. However, this access – usually to 'foreign' content with foreign perspectives – has its limitations. Easier access to globalised knowledge is fast turning us into 'consumers' of distant and potentially irrelevant information. More worrying perhaps, developing countries are being 'invaded' by foreign ideas and values that may undermine or overwhelm local cultural heritage and economic livelihoods.

If we are serious about the use of ICTs as an empowerment tool – so poor people can shape decisions that affect their lives, so they can grasp economic and social opportunities, and so they can deal with misfortunes and disasters, then this foreign content must be matched by the expression and communication of local knowledge that is relevant to local situations. To a large extent, this means that ICTs need to be conveyors of locally relevant messages and information. They need to provide opportunities for local people to interact and communicate with each other, expressing their own ideas, knowledge and culture in their own languages.

This is not an easy task. Content does not flow of its own accord; it needs owners or originators with the motivation to create, adapt or exchange it. As well as vision, these pioneers need to have the creative, technical and people skills to transform an idea into something that can be disseminated or exchanged. Moreover, since few of us have all the necessary capacities to create and communicate content, partnerships are essential to get the job done. There need to be very strong incentives for all the elements to come together at the right time and place.

In a search for ways to promote local content, we have few guidelines to follow. Should we create more effective 'push' mechanisms, increasing and improving the supply of content? Should we focus on the demand side, so that local content is more highly valued? Should we look at the containers in which content is packaged, making them more attractive and accessible? Should different content types get different treatment?

These and other questions are addressed in a series of IICD research reports focusing on local content issues. This report[1] was prepared as part of the overall study on the collection and propagation of local development content, executed by IICD, and funded by DFID. It draws on more than 30 cases from the healthcare sector, presenting sector specific insights and lessons from around the world. The case stories referred to in this report are published in IICD research report 8.

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[1] The author thanks all the people who contributed to thisstudy, notably those who contributed case stories and those who contributed to the online discussion on 'HIF-net at WHO'. Neil Pakenham-Walsh coordinates the INASP (International Network for the Availability of Scientific Publications) Health programme (www.inasp.info/health).

KEY MESSAGES

Despite its massive potential, the current global information explosion has had surprisingly little impact on access to relevant, practical information for healthcare providers in developing countries, especially those working in primary care and district hospital settings. Healthcare providers in developing countries continue to lack access to the basic information they need to learn, to diagnose, and to save lives.

At the University of Zimbabwe for example, a degree of desperation was conveyed in some of the responses (from district and primary health workers) to open-ended questions on the effects of the information deficiencies …… "we are forgotten", "we have no contact", "no communication". Over 90% of respondents felt they were "disadvantaged" or "severely disadvantaged" by their distance from the main centre.

- Healthcare providers in developing countries continue to lack access to the basic information they need to learn, to diagnose, and to save lives.

- Relevance and reliability are paramount in meeting health information needs.

- Local 'health information providers' (publishers, libraries, NGOs, ministries of health…) are best placed to provide content for local 'end users'.

- The effectiveness of the international 'health information community' is dependent on its ability to facilitate the expression of local knowledge and experience, and to promote dialogue and exchange among local providers and end users.

- Local ownership is essential. Local producers and end users must be involved from the earliest stages in dialogue, priority-setting, problem-solving, creative thinking, and generation of plans for action.

- Creation and adaptation of local content requires access to the full range of existing source materials, both internationally and nationally.

- Creation and adaptation of local content is resource-intensive and requires the full range of skills, including medical knowledge, knowledge of end–user needs, and writing and editorial skills.

- Traditional knowledge and 'scientific' knowledge are mutually reinforcing and can be combined in ways that enhance the quality and coverage of healthcare in developing countries.

- As never before, ICTs present new opportunities to enhance the above processes.

RELEVANCE AND RELIABILITY

AfriAfya, Kenya

'Despite the plethora of health information on the Internet, very little is directly suitable for dissemination to poor communities as it is. It needs to be repackaged to ensure local suitability and relevance.'

To be useful, information materials for healthcare workers need to be **relevant** and **reliable**.

Relevance: Information for healthcare workers must be relevant and accessible to the end user - otherwise it will simply not be used. Local 'health information providers' - whether ministries of health, NGOs, training colleges, publishers, or libraries - are best placed to provide such information - to create and adapt information for local healthcare workers. They are best placed to understand their information needs, use of language, educational level, and level of medical training. They are best placed to understand the context of how the information will be used: socio-economic factors that affect healthcare interactions, the levels of available resources (e.g. drugs, diagnostic equipment), local healthcare infrastructure and services, cultural factors, and local disease patterns.

Reliability: Information can be either 'tried and tested' scientifically - as in randomised controlled trials, which lie at the heart of 'evidence-based medicine' - or not. The knowledge base for evidence-based medicine represents a global scientific understanding of the practice of effective healthcare. It is based on the synthesis of the available evidence worldwide, each piece of evidence being scrutinized and evaluated for bias, confounding factors, and other causes of error. Single research studies seldom, if ever, are able to answer definitively a specific researcher-based question (e.g. Is treatment A more effective than treatment B for the treatment of disease X?), let alone a healthcare provider-based question (e.g. What is the most appropriate treatment, among those available to me, for a patient with clinical features suggestive of disease X, Y or Z?).

North-South Imbalance of Global Research and Global Knowledge Base

Advances in global knowledge are largely dependent on the ability to collate, analyse and review the relevant literature and experience worldwide. Global knowledge and local knowledge are interdependent.

However, it is widely recognized that the vast majority of research carried out globally is carried out in and for those living in developed countries, with relatively little attention being paid to the health of those in developing countries. As a result, the global medical knowledge base itself is inequitable, skewed towards the priorities of developed countries.

The world's experience of the HIV-AIDS epidemic reminds us that the world's health is wholly interdependent. There is a clear need to support local research in developing countries, to generate increased content that will feed into the global knowledge base and be applied to improve international health. Research priorities need to be defined by a combination of national ('local') priorities, as captured in the concept of 'Essential National Health Research' (ENHR).

SA HealthInfo, South Africa

'For ENHR to succeed it must be supported by efficient knowledge management – promoting the logical transformation of data first to information then to knowledge in a systematic way, thereby enabling the innovation process for the creation of new knowledge and knowledge dissemination aimed at implementation of findings.'

The Value of Traditional Knowledge

The developing world bears a rich and diverse heritage of traditional medical knowledge, acquired empirically over thousands of years. Much of this knowledge is not easily translatable to the development of new understanding in the treatment of disease. Nevertheless, the majority of drugs and medicines in current use are derived from, or related to, chemicals found in plants. It is clear that much traditional knowledge remains untapped - in the cultural heritage of traditional healers and in the pharmaceutical properties of the plants that they use. Such knowledge has the potential for scientific investigation, particularly in areas such as medicinal plants. International pharmaceutical companies have not failed to notice this, and they have been criticized for exploitation and 'theft' of local knowledge. Branches of science have developed (e.g. ethnobotany and ethnopharmacology) which study the relationships between man and plants, and the pharmaceutical potential of plants. Many developing countries have recognized the potential value of traditional knowledge and are focusing their research efforts accordingly.

Fantsuam Foundation, Nigeria

'The traditional explanation for the use of the dried leaves of a particular plant as incense during childbirth was that it keeps evil spirits away. A woman provided a clue as to its scientific basis when she says that the incense makes her feel more relaxed – this suggests that the incense may be some form of inhalation anaesthetic.'

LOCAL CONTENT CREATION AND SHARING PROCESSES

Any piece of 'new health content' is in practice a synthesis of 'content' from a range of sources (formal and informal publications, own experience, research data, and/or the experience of others, expressed orally, in print, or visually), shaped by the author's interpretations and beliefs. In other words, generation of new content plus access to source content (whether local or global) are part of the same.

Participatory Approach

It is increasingly recognized that the creation of information materials for healthcare workers should involve local producers and end-users throughout the publication cycle, from initial needs assessment and planning through to evaluation of use and impact assessment. ICTs, including focused email lists, email questionnaires, and web-based interaction, have a potentially valuable role to play - as a complement to face-to-face interactions.

If a product is needed, local producers and end-users need to be able to explore the various options for how such a product might be made available. The successful creation and integration of a new publication is highly resource-intensive and can be wasteful and duplicative. Often, the product required (or something very similar) may already exist nationally, regionally or internationally. It is critically important that local producers of health content in developing countries are able to find out and assess the full range of publications that already exist locally and globally. Currently, local producers are severely disadvantaged in this respect because:

1. There is often nowhere that local producers can go physically to assess what is available nationally or internationally. Thanks to the African Association for Health Information in Africa (AHILA), most if not all countries in Africa now have a designated national reference library for health, which is often a medical school library. However, in practice these libraries are severely under-resourced with minimal acquisition budgets, and materials are often outdated. None of these libraries can provide comprehensive access to the range of publications worldwide that are relevant to (or could be readily adapted to) the needs of healthcare providers in developing countries.

2. Similarly, there are no comprehensive online resources that can help local producers to assess the range of existing publications relevant to end users in developing countries. Various tools are available, including the INASP Health Links gateway (www.inasp.info/health/links) and the Source bibliographic database (www.healthlink.org.uk/database.html). However, it remains impossible for local producers and librarians to obtain a comprehensive overview of the full range of available national and international publications that can be recommended for different types of end user. In most cases, it is not possible to access the full text electronically.

In this regard, ICTs have hardly started to show their potential. In the meantime the humble CD-ROM could readily be used as a showcase (and procurement tool) for some of the world's most useful publications for different groups of end users – and such an initiative could readily be funded by the publishers themselves (after independent editorial selection). In the long term, web-based databases with links to full text are likely to be the way forward.

For South-South exchange of materials, there is a truly exciting potential for web-based sharing of new and adapted local content, which could be organized and annotated to provide a

browsable journey through local health information content by geographic region, type of end user, and medical subject area. This in turn could be supported by online services specifically designed for local producers of health content: writing and editing workshops; email discussion fora on issues relating to health information production; access to 'generic' materials or materials that are produced with a view to local adaptation; links to relevant websites, etc.

Information Needs: an Ongoing Exercise

Any librarian would remind us that the assessment of information needs is not a one-off activity, but an ongoing exercise based on the individual requests and questions of end users.

AfriAfya, Kenya

'Questions raised range from simple factual issues (e.g. can one get AIDS from being bitten by the mosquito, or how effective is the condom in preventing HIV transmission), to social issues (e.g. how to deal with the unfaithful drunken husband who will not agree to condom use), to cultural issues that promote the spread of HIV/AIDS (e.g. how to deal with 'matanga' - funeral rites that involve a lot of sexual activity thus contributing to spread), to community experiences gained over time (e.g. the question of how engine oil or specified toothpastes work in relieving HIV-related skin lesions!).'

Further, needs assessment raises new challenges when applied to ICTs:

SA HealthInfo, South Africa

'Understanding the target audiences' needs is difficult when using web technology, as the user-base is effectively the entire world. It is recommended that a few target groups of similar needs and interests be selected to try to meet their requirements.'

Access to Existing Global Knowledge

For those who are responsible for the creation and propagation of local health content - whether it is a biomedical research study or a new manual for healthcare workers - it is vital that they themselves have *access* to all the relevant and reliable information they need to plan and implement their activity. For the researcher, access to existing knowledge is essential to plan their own work and thereby produce new data, new ideas and new research questions that add usefully to the international medical community; lack of access to such information is a serious barrier to effective cooperation among scientists worldwide. For the creator of a new practical manual for healthcare workers, it is equally vital to have access to existing information in order to produce a manual that will provide healthcare workers with relevant and reliable information to support learning, diagnosis, and healthcare provision.

The constraints to developing-country access to global knowledge are many and varied and include:

1. Incomplete organisation of existing medical knowledge - this is a global problem - the Cochrane Collaboration and others are seeking to systematically review the global medical literature on an ongoing basis in order to help guide future research efforts.

2. Costs. Despite efforts to promote free and open access to medical and other scientific information, the majority of such information is by no means free - indeed the subscription

prices of journals, for example, are rising. In developing countries, library budgets are falling, and individual scientists have limited purchasing power. Recent schemes such as INASP's Programme for the Enhancement of Research Initiative (PERI) and World Health Organization's (WHO) Health InterNetwork mean that (as a result of negotiation with publishers), Internet access to full-text journals is now becoming free or low-price to developing country researchers and healthcare providers.

3. Connectivity. The world's medical literature is increasingly moving online, while printed forms become relatively inaccessible because of costs of printing and distribution. But many health professionals in developing countries, including many university libraries but especially in district and rural areas, continue to have limited access to online sources for reasons that are well described.

Access to Existing Local Knowledge

MoH National Health Learning Materials Programme, Ghana

'Avoidance of duplication is our watchword. During a meeting with the key people in the priority area, we tried as much as possible to identify all the materials that already exist, particularly in Ghana, and contacts are made for copies to study so that we avoid duplication.'

Some local knowledge is the product of scientific research - part of this research is taken up by scientific journals recognized by the major scientific indexes, and thereby integrated into the global knowledge base - becoming a part of global knowledge. Much of the research is published in developing-country journals, but many of the latter are not recognized (some would say, biased against) by the international scientific indexes. Such research may reach a part of the research community in the same country, but it is likely to be inaccessible to those in other countries and to the international medical community.

African Journals OnLine (INASP)

'African journals have not been able to take advantage of the opportunities offered by the Internet, because of weak technological infrastructures and costs. Many have ceased publication altogether. African research has suffered, because the means to publish research results are lacking and the results on which to develop further research are not disseminated.'

Quality of Source Information

AfriAfya, Kenya

'We at AfriAfya see ourselves as a Staging Post, accessing and receiving information from local and international sources, adapting it and ensuring it is relevant to practical issues in our setting, and then disseminating it to the community-based health intervention sites that we are working with. The quality of information available to us is therefore an important input into this whole process.'

Critical appraisal skills are vital in the selection of local and international materials for reproduction, translation, adaptation, and synthesis. Many existing publications in developing countries indicate a pressing need for the development of such skills. Programmes such as CASP (Critical Appraisal Skills Programme), working in cooperation with groups such as the Cochrane Collaboration, have shown that critical appraisal skills can be readily developed through on-the-job training and in-country workshops. It is particularly vital that local content producers have such skills if they are to meet the needs of end users. Local producers are then

ideally positioned to combine critical appraisal of source information with special knowledge of their end users. As one 'HIF-net at WHO' subscriber suggested, 'Local communities can to a large extent make their own judgement about how North information can be useful in the South'.

Ownership Issues

Fantsuam Foundation, Nigeria

'Information sharing is not a problem commonly encountered among the ordinary villagers. There is a willingness to do this with nearby villagers and even with researchers from outside. It is the traditional healers who feel threatened by such dissemination of their knowledge and skills. In Nigeria they now have an association that acts like a trade union primarily to regulate how information is shared with non-practitioners.'

Commonwealth Regional Health Community Secretariat, Tanzania

'Collection of grey literature is not easy. Researchers are sometimes uncooperative or unwilling to share information, and facilities and funds to copy the information are not always available. However, compilation of bibliographies and production of issue summaries may stimulate researchers to contribute their work.'

SHARED, Zimbabwe

'The issue of intellectual property rights came up very much in the discussions with many scientists and head of institutions. However, giving people the responsibility to manage the information which is made public is important in getting more and more people participating in initiatives which involves sharing their information with others.'

Writing and Editing New Content

The importance of writing and editing skills are greatly underestimated. They can make the difference between a product that will never be read beyond the first page, and one that will be used time and time again. Producers of local content in developing countries need to be supported to attract and retain skills into their organisations. Good writing and editing skills are partly dependent on overall education, but they can be developed through training and on-the-job experience. Writing and editing are highly resource-intensive, but gains in efficiency and effectiveness can be achieved.

MoH National Health Learning Materials Programme, Ghana

'The editing team was doing group editing because they were not experienced. This was also found to slow down the pace of work. Now an editor is assigned to a manual to coordinate and edit, after which another editor does proof reading. This has been possible as a results of local and external training organized for the staff.'

Examples of Adaptation

As remarked by a subscriber to 'HIF-net at WHO': Essential information should not be boring and dull - it needs to be relevant to the local needs and priorities, and delivered in a palatable, attractively packaged, easily digestible and culturally appropriate format. We should devise a mechanism to recruit "creative local talent" to help in this.

According to the Fantsuam Foundation, Nigeria: 'Where There is No Doctor' is the most commonly used health reference text. Sections are translated into local dialects and used as required.

The Commonwealth Regional Health Community Secretariat in Tanzania repackaged groundbreaking research on maternal mortality into a policy action booklet. This was disseminated widely through the IDCs who sent it to their mailing lists and organized policy seminars for policy makers to understand and discuss the issue and its consequences in their country. In several countries, country-specific information was repackaged to support the regional policy booklet. Following these seminars, the booklet was repackaged into a drama for Zimbabwe audiences and this drama was adapted by the Zambia IDC for a Zambian audience.

At the International Centre for Diarrhoeal Diseases Research, Bangladesh, articles on various diseases and health problems, highlighting underlying causes, signs and symptoms, treatment, prevention, etc. are contributed by the doctors and researchers of ICDDR,B and are written in simple native (Bangla) language understandable even to the half-literate rural people of Bangladesh.

According to the Health Foundation of Ghana, food items which may be suggested as rich sources of specific nutrients in the literature may not be readily available to the majority of the rural folk, in which case the CBH team replaces this item with locally available items known to be rich in the same nutrients. Kontomire, is the local species of spinach, very rich in folic acid it is affordable and readily available to everybody. Also a rich source of Vitamin A is the palm fruit, which is locally known as "Abɛ." Furthermore, while Haemorrhoids is a common problem in Ghana, many rural folk are unable to identify the word unless the local term, "Kooko" is used. The use of local language in the literature we disseminate is essential as it allows readers to identify conditions and to better associate the information. And, since some over the counter medicines found in literature may not be available in Ghana, the local team researches equivalent products on the local market and substitutes these in the literature.

Repackaging

Commonwealth Regional Health Community Secretariat, Tanzania

'CRHCS repackaged groundbreaking research on maternal mortality into a policy action booklet. This was disseminated widely through mailing lists and policy seminars for policy makers to understand and discuss the issue and its consequences in their country. In several countries, country-specific information was repackaged to support the regional policy booklet. Following these seminars, the booklet was repackaged into a drama for Zimbabwe audiences – the drama was also adapted by the Zambia IDC for a Zambian audience.'

Integration of Allopathic and Traditional Medicine

> Fantsuam Foundation, Nigeria
>
> *'Invariably, we find there are always elements of western scientific knowledge that can be rafted to an indigenous health practice to make it safer and more efficient.' ... Our TBAs have received training in the use of aseptic techniques and are now synthesizing the use of incense to their practice. ... Traditional bone setting has a strong element of telepathy as well as use of herbs, traditional emollients and creams with local anaesthetic effects. A limb bone setter has been persuaded to ask his patients to come with new bandages and sterile dressing for their dressing to reduce incidence of post-traumatic sepsis. He also tells his patients to visit the hospital to receive anti-tetanus treatment after he has performed his rites.'*

> Fantsuam Foundation, Nigeria
>
> *'The recognition accorded indigenous knowledge makes it easier to collaborate in providing scientific explanations for certain practices and demonstrating the value (positive or negative).'*

Champions

> SA HealthInfo, South Africa
>
> *'A champion must be identified for each content-specific area to (a) allow regular flow of evidence-based quality-assessed information and (b) stimulate interaction within communities of practice through discussion groups.'*

> Commonwealth Regional Health Community Secretariat, Tanzania
>
> *'The most active centres had a technical person who championed the activities of the centre and provided leadership, vision, motivation, support and guidance to the IDC coordinators.'*

Cooperation

> AfriAfya, Kenya
>
> *'Cooperation with external partners and international organizations has been a key contributor to the success of the project . . . . Learning from others already doing it has meant that we have not had to try to reinvent the wheel.'*

> Health Systems Trust, South Africa
>
> *'Duplication does occur, unfortunately. I suspect that organisations think that it is easier to produce their own publications than to collaborate with others.'*

> Commonwealth Regional Health Community Secretariat, Tanzania
>
> *'Although information may exist, people/organizations will recreate or restudy something so that it has their name on it - rather than use existing information.'*

Occasionally, a project can demonstrate a capacity to promote new levels of cooperation among international and local agencies working in the same country:

AfriAfya, Kenya

'Networking, collaboration and ongoing partnership between different health organizations and institutions can be successfully developed, as demonstrated by the seven partner agencies currently working together and seeing mutual benefit in this. At the beginning there were concerns about 'fraternizing with the opposition', and 'big' partners overshadowing 'small' partners, but these have since diminished.'

South-South Sharing

Kenya AIDS NGO Consortium (KANCO), Kenya

'Through the production and distribution of a quarterly members newsletter, 'Partner' KANCO provides members with the Consortium news and offers them a chance to share their experiences, lessons learnt and best practices with one another. KANCO also published the East African edition of the 'AIDS Action' newsletter and distributes it to readers within Eastern Africa with an aim of sharing information and common experiences with the region.'

Latin American Centre for Resources and Information on Eye Health (COLARIS), Colombia

'We would like to show and share our content worldwide so more organizations would get involved and this way we would have a larger and more varied content and more people to share these experiences. The globalisation of a programme like this would have benefits for both our centre and the International community that work to decrease the preventable blindness.'

MoH National Health Learning Materials Programme, Ghana

'Sharing information is one of our dreams. We are not sharing information outside Ghana now but the NHLMC aims to establish more networks of information contacts within Ghana and international level for information sharing.'

Sustainability

Pro-poor information development initiatives rarely become entirely self-financing, and it is arguable whether this should always be the aim of such projects. More important, perhaps, is the cost-effectiveness of investment in information activities.

Health Foundation Ghana

'The CBH - Ghana program is a model for self-sustainability. The digest was created to be a credible health information resource for Ghana, and since it has achieved its goal and continued to raise awareness, it has been able to raise funds from the Ghana Medical Association, Ghana Airways, and several local businesses and organizations.'

Evaluation

The discussion on 'HIF-net at WHO' pointed to the importance of evaluation. Recommendations include:

- Extensive field-testing of draft material.
- Incorporation of lessons learned during field-testing into the final product.
- Surveys on change in healthcare practice, disease prevalence, use of services, etc.
- Listening to feedback from end-users seriously and improving the product accordingly.
- Set measurable performance indicators, e.g. impact on disease incidence.

Demonstration of impact is notoriously difficult with health communications for development. Even where a cause-effect relation can be demonstrated (as in the case of behaviour change in 'social marketing' activities), the implications are unclear. Many observers are now saying that the focus should be more on 'improving' the processes and sharing of lessons learned. 'Process indicators' may prove to be at least as useful as 'outcome indicators'. The quality of 'process' in any programme is likely to be closely related to the programme's ability to engage local input, dialogue and ownership.

USE OF ICTS

Information technology has the potential to increase dramatically the ability of local 'health information providers' to produce locally relevant content, whether this is in electronic or printed form, visual or audio.

From the 'HIF-net at WHO' discussion list: "We believe that the modern equivalent of the health workers white coat pocket is the handheld computer (PDA)."

There is no doubt that 'modern' ICTs will play an increasingly important role in the provision and use of information in developing countries. However, no single technology or medium meets all needs. The current case studies indicate that most programmes in developing countries use a variety of media. For example, the Kilimanjaro Christian Medical College, Tanzania, reports use of: computers with Internet, CD-ROMs, floppy diskettes, video recorders, photocopier, radio, audio cassette recorders, slide projectors, overhead projectors, writing boards, and flip charts - in addition to standard printed materials. Each of these media is good for certain tasks in certain circumstances.

Many of the case stories reported lack of access to one or more of the above media.

Fantsuam Foundation, Nigeria

'We do not have an email access at our field office and it is a 5 hours journey to the cybercafe in the capital city. The cost in terms of time, finance, and safety of road travel means that we have access only once a fortnight. To supplement this effort, our UK office downloads our emails from Microsoft Outlook and burns them into a CD which is sent to us as often as there is a traveler returning to Nigeria. The emails are then downloaded to our desktop and the contents perused for relevant health information.'

More commonly, it is the choice of *output* media that is limited - by the circumstances of end users: Local content on a web site, for example, might be accessible directly to only a small proportion of the population, whereas local content broadcast on radio is potentially accessible (albeit transiently in most cases) to almost anybody.

The **Internet**, in particular, is having an enormous impact on the way in which information is shared, providing opportunities to link with partners around the world, to access 'source' information, and to disseminate locally created or adapted resources for the benefit of others. Meanwhile, the CD-ROM continues to be a popular medium in developing countries, where Internet access is often slow, expensive or absent altogether.

Optonews, Tanzania

Kabissa, a space for change for Africa, is equally credited for its support through hosting our website free of charge. Through this site, OptoNews Africa has reached a considerable number of professionals and organisations involved in vision and eye health.

SHARED, Zimbabwe

The system is brilliant in its simplicity, as it stimulates each and every member to keep personal data in optimal shape as a routine with very simple browser-operated tools.

> **MoH National Health Learning Materials Programme, Ghana**
>
> *'We do not use the web much in our work. I cannot mention any specific web site that we use as such. Most of the images that we use for illustrations are real pictures that we take and scan. . . Our major limitation to the use of the Internet in our work is that the facility is virtually not accessible to most of the staff during normal working hours. It is the same line that we use for the telephone service. It therefore means that if you are on the net you will be blocking incoming telephone calls. Staff who want to go on the net will have to come very early in the mornings before start of work or stay behind after close of work.'*

> **Fantsuam Foundation, Nigeria**
>
> *'The WorldSpace Radio Receiver Health Channel has been a useful source of topical health information for the education of the village theatre groups. The information is translated into the local dialects and adapted for theatrical production.'*

> **BDOnline, Bangladesh**
>
> *There are about 26 Medical Journals (all are not regular) and 5 Newsletters published in Bangladesh by government, different medical associations, NGOs and pharmaceutical companies. No journals are available on the web except the JHPN of ICDDR'B (International Centre for Diarrhoeal Disease Research). There is no national web site for health professionals.*

> **African Journals OnLine, INASP, UK**
>
> African journals have not been able to take advantage of the opportunities offered by the Internet, because of weak technological infrastructures and costs. Many have ceased publication altogether. African research has suffered, because the means to publish research results are lacking and the results on which to develop further research are not disseminated. However the AJOL project successfully shares, locally, nationally and internationally, local content that has already been created by using the Internet.

> **SA HealthInfo, South Africa**
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> *Information systems in the South African health context are disparate and not integrated. Although there is an abundance of web sites, no single entry point existed at the time of initiating this project, to provide access to quality-controlled health information resources, or to allow for reciprocal sharing of information.*

Audio (digital or tape recordings played back as required) can be used to broadcast public health information, but there is very little reported experience of audio for information access and training for health workers in developing countries.

> **Ghana Ministry of Health/AFROPAC**
>
> *The content of the audio-taped version is communicated through public address systems mounted on vans (mobile) at market places and social gatherings and at community outreach educational programmes, recorders at hospital and clinic waiting rooms and at the maternal and child welfare clinics.*

Local community radio offers an interactive medium, with live discussion, phone-ins and debate. 'Soap radio' is potentially of high impact, being accessible, entertaining, and a good basis for community discussion. Community-based discussion around health issues may well be more effective than didactic health messages, in promoting healthy behaviours.

Similarly, **video and TV** are emerging as useful technologies for public information and have an unrealised potential for health worker education.

Puntos de Encuentro, Nicaragua

'The kingpin of the strategy is our highly-rated "social soap" TV series, Sexto Sentido, backed up by our daily youth radio talk show, and combined with interpersonal and community reinforcement, through alliances with over 200 organizations around the country.. ... Before, we had agreed that the concept of "a target audience, a message constantly repeated contributes effectively to change". We have observed, however, that this process generates a "saturation and a boomerang rejection effect" We now work from the hypothesis that an issue must be treated in its entirety, its complexity; via a process of successive steps towards the point.'

CD-ROM is particularly well suited for self-learning. For prolonged use of electronic material with high interactivity and intensive use of graphics, CD-ROM (and other stand-alone systems) comes into its own as compared with the Internet, particularly in developing countries. Previous studies have suggested that CD-ROM based training can be at least as effective as tutorial training, and less expensive. Some local institutions are now introducing these methods into healthcare training.

ACT Health, Tanzania

Learning materials are being formatted for CD distribution. A research programme is underway to compare CD based learning vs. conventional learning in a collaborating Clinical Officer Training school.

Electronic mail is a simple, increasingly accessible technology that has revolutionised international communications and exchange of information, perhaps more than any other single medium in recent years. Its potential in development communication is immense, permitting open discussion in communities that are diverse, both geographically and professionally, yet are keen to work together towards a common interest. The email discussion list 'HIF-net at WHO', for example, has allowed international debate on the subject of 'local health content' as well as increased awareness of the issue, among a committed group of over 900 individuals worldwide, from publishers to librarians, from community health workers to senior executives in international health agencies, from NGOs to ministries of health, all 'working together to improve access to reliable, relevant information for healthcare workers in developing and emerging countries'.

Health Development Networks, Thailand

Electronic networking is a valid and viable means of providing learning, dialogue and highlighting issues as well as creating virtual conferences among those who cannot attend in person. At a fraction of the cost of conventional meetings, these (electronic) forums can, and do, effectively attract participation from people in developing countries, despite issues of electronic connectivity and access.

> *Health Development Networks, Thailand*
>
> *'We know from previous evaluations of structured discussions, that on average 80% pass on messages to people they know (Stigma-AIDS Survey, 2001, STOP-TB survey, 2002 – see HDN website).'*

Email lists can also be used as a way of promoting expression of local content:

> Health Development Networks, Thailand
>
> 'In order to encourage local content creation, the key skills required are good facilitation and moderation skills. The content exists, and is shared on a daily basis at exclusive events, meetings and workshops - it is our collective responsibility to bring this content out into broader forums, so that it can have an influence on daily practices as well as wider audiences, such as policy-makers and international organizations.'

Email can be a useful way to consult local health experts:

> Health Systems Trust, South Africa
>
> *'One interesting application (of an email list) was the posting of a digital photograph of a snake captured brought in by a patient who was bitten, that was circulated to the list for identification to assist management choices for the patient and future knowledge.'*

Email technologies may often be more appropriate than more sophisticated, web-based technologies:

> Health Development Networks, Thailand
>
> *The project used discussion forum platforms based on low-cost and widely distributed communication standards (i.e. e-mail, rather than web-based technologies). This helped to steadily establish a permanent, maturing and active electronic network of HIV/AIDS organisations worldwide.*

HOW TO STRENGTHEN CAPACITIES

Improving access to reliable, relevant information for healthcare workers is potentially the most cost-effective way to enhance the delivery of healthcare and reduce the burden of disease and death in developing countries.

International organizations have spent an increasing amount of time trying to meet the needs of *end users*, and producing publications accordingly. But is this the best approach? Should international organisations in fact be concentrating their efforts on supporting the long-term capacities of local 'health information providers' - publishers, ministries of health, library services, local and regional NGOs?

This was one of the conclusions reached by the WHO-Health Information Forum Cooperation Group:

> "Strengthen the local production, translation, adaptation, and dissemination process in resource-poor countries. National and local players – ministries of health and education, local publishers, NGOs – are best placed to produce many types of materials. Their capacity needs to be supported as part of any long-term strategy to improve information access."

ICTs are increasingly available to creators and adaptors of local content, and (less so) to end-users. How can international organisations, local creators and adaptors and others work more effectively together to meet the needs of end users? What channels are available for sharing of local content, whether locally, with other southern end-user groups, or internationally? Formal and informal printed publications, email, CD-ROM, the Internet? How can they be enhanced to facilitate the sharing of local content? What are the training, IT and other requirements of local re-packagers of information?

As one person noted on 'HIF-net at WHO': "Production through local capacities will enhance continuity and sustainability once foreign support for the project ceases . . . Local production stimulates economic development and contributes to poverty reduction."

Infrastructure

There is unease among many development workers about the project-based approach of NGO programmes in developing countries, many of which seem to provide a never-ending stream of 'pilot projects' that provide benefits to limited geographical areas, or specific user groups, while other areas or groups remain unserved. This is also true of information programmes, which are often vertical, subject-specific, and geographically uneven. Such programmes may contribute to fragmentation of services within and between districts and countries. Some would argue that the programmatic implementation of NGO services has in fact weakened the existing national public sector infrastructure, leading to reduction in quality of services to the majority. As one HIF-net at WHO subscriber noted: "All ministries of health have departments of health information. These departments should be strengthened and sub-offices should be established in regional and district locations."

On the other hand, many NGOs argue that public sector services have systemic, organizational constraints that limit their ability to provide cost-effective services. The issues of this debate are beyond the scope of this discussion, but it does seem vital that any information for development

programme should seek to promote cooperative services that build on and strengthen existing infrastructures, including public sector services. The aim should be to distribute benefits as widely as possible. And when the programme comes to its conclusion, the national infrastructure should be left stronger, not weaker, than it was before.

Training

Kintampo, Ghana

The GTZ has supported the Brong Ahafo region with computers, with the intention of deploying the technology at the district level. The objective is to make health information readily available to assist in planning and monitoring health services. Secondly it is hoped that it will assist in improving data capture, storage and retrieval, analysis and reporting. Unfortunately the availability of computers has not made any significant difference and the objectives are yet to be achieved.

And yet . . .

Kintampo, Ghana

One of the obstacles to the slow development and utilization of ICT has been the unfamiliarity of field staff to the technology. Though extensive training has been done, the expected result has not been significant.

The above is one of many examples of the difficulties in implementing IT, even with 'extensive training'. A wide range of other factors needs to be taken into account. Importantly, such programmes need to be developed and implemented with the close involvement and 'ownership' of end users if they are to be successful.

Access

In the debate on generation of local content, some 'HIF-net at WHO' subscribers pointed to the need to make more 'relevant' international content available free of charge.

Initiatives like PERI (INASP's Programme for the Enhancement of Research Information) and HINARI (Health InterNetwork Access to Research Initiative) are making large parts of the international academic literature available on the Internet to health professionals in developing countries, free or at low cost. As suggested by their titles, these initiatives are targeted to researchers and depend on web access. The programmes are warmly welcomed by research institutions and medical libraries, and there are indications that they are:

1) increasing the profile of libraries, and
2) driving institutional commitment to improve bandwidth and access.

For the larger group – healthcare providers – both in training and in practice, the international journal literature has a limited role.

There is currently limited material available (free or otherwise) on the Internet that is relevant to district and primary healthcare workers in developing countries. One reason for this is that most end users in these categories do not have access to the Internet. But the international community is being slow to recognize the potential of local health information providers, who

increasingly DO have access, and who also have the tools for reproduction, adaptation and distribution. Much more could and should be done to provide international source information - and other supportive services (see below) - for producers of local content.

Coordination

As one 'HIF-net at WHO' subscriber noted:

"Currently, many projects occur in isolation, use up scarce resources, and duplicate efforts."

One approach is to promote communication and cooperation:

"Communication and sharing of experience among 'health information providers' brings new ideas and encourages providers to look at the subject from different angles - it broadens one's horizon." (HIF-net at WHO)

The case study from COLARIS, Colombia, agrees:

"We need to have a wider vision of the different health groups working on communications in order to create new ideas."

"One way to promote sharing of content is to "Develop a network of local, national, and regional clearinghouses . . . could have electronic copies of resources available on websites for download." (HIF-net at WHO)

CONCLUSIONS

Creation and propagation of local health content is vital to support the information needs of healthcare providers, researchers, policy makers, and the general public. Healthcare delivery in developing countries can be enhanced through cooperative creation and propagation of local content. Adaptation and synthesis of global and local knowledge are essential for the development of reliable, relevant information for healthcare providers.

The 35 case stories in the current study demonstrate a wide range of approaches to the creation and propagation of local content in all its forms and for different end-user groups. This is a highly creative area, with new ideas and approaches emerging all the time. Such creativity is to be encouraged, while acknowledging and building on the successes of existing initiatives.

The key to the success of many of the projects described is local ownership. Every 'new idea' is likely to fail unless local partners and beneficiaries have a sense of ownership. In practice, this means that local stakeholders must be involved from the earliest stages in dialogue, priority-setting, problem-solving, creative thinking, and generation of plans for action.

Global health content is dependent on the sum of local health content inputs. Similarly, the effectiveness of the international development community is dependent on the sum of inputs from local stakeholders. As never before, ICTs present new opportunities to enhance international communication, cooperation, and sharing of ideas, priorities and experience.

IICD Profile

The International Institute for Communication and Development (IICD) assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICTs).

IICD realises its mission through two strategic approaches. First, Country Programmes bring local organisations together and help them to formulate and execute ICT-supported development policies and projects. The approach aims to strengthen local institutional capacities to develop and manage Country Programmes, which are currently being implemented in Bolivia, Burkina Faso, Ghana, Jamaica, Mali, Tanzania, Uganda and Zambia.

Second, Thematic Networks link local and international partners working in similar areas, connecting local knowledge with global knowledge and promoting South-South and South-North exchanges. Thematic Networks focus on sectors and themes like education, health, governance, the environment, livelihood opportunities – especially agriculture – and training.

These efforts are supported by various information and communication activities provided by IICD or its partners. IICD is an independent non-profit foundation, established by the Netherlands Ministry for Development Cooperation in 1997. Its core funders include the Directorate-General for Development Cooperation (DGIS), the UK Department for International Development (DFID) and the Swiss Agency for Development and Cooperation (SDC).