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EQUIP'AID CONFERENCE PROCEEDINGS

19 & 20 NOVEMBER 2013

CHAMONIX MONT-BLANC / France

· The Majestic Congress Center ·

Summary

Promoting quality medical equipment support projects in the field of international aid for better healthcare in developing and transitional countries is the ambitious goal for Equip'aid's first forum. This conference represents the high note of a three-year action programme led by Humatem in partnership with the European Hospital and Healthcare Federation (HOPE), Cap Solidarities, Biology Without Borders, Groupe URD and with the financial support of the European Union (EuropeAid), the Rhone-Alpes region, the General Council of Haute-Savoie and the commune of Les Houches.

Expectations are high, considering the number of participants (183) who have come from 33 countries, the variety of communication proposals submitted in preparation for the programme and the interest shown by the World Health Organisation who are supporting this event.

Official Opening

"Generosity is consubstantial to hospital activity", said **Eric Trottman**, Project Officer, International, Europe and French Overseas Territories in the Resource Strategy Department, Ministry of Social Affairs and Health (France). Thus setting the tone for future discussions and exchanges, he stated that medical equipment donations must be in accordance with the principles of sustainable and inclusive development, provided they are carried out efficiently and do no harm! The discussions during these two days must therefore aim to define the requirements of effective cooperation, involving all stakeholders, from the non-profit sector as well as the hospital and industrial sectors.

In her presentation, **Claude Comet**, Rhone-Alpes regional councillor, also praises the initiative of this conference. She is delighted that this first meeting takes place during international solidarity week in Rhone-Alpes, a region where humanitarian tradition goes back a long way. Comparing practices contributes to cooperation that is increasingly focused on quality. The region is particularly aware of this and sees a new opportunity to promote unity and respect through these discussions between stakeholders in the North and the South.

To improve the provision of care is to improve the quality of people's lives. **Michel Charlet**, general councillor of Haute-Savoie, congratulated the organisers for holding this event which he is delighted to host in his department, a neighbour of "International Geneva".

Xavier Chantelot, deputy mayor of the commune of Les Houches, sees a genuine opportunity, through this conference and the meetings between participants, to influence global practices.

"The scope for growth is large in terms of medical equipment donations"

Pascal Garel, Director of the European Hospital and Healthcare Federation (HOPE) and co-organiser of the event is a longstanding player in the field of international aid. Over the years he has seen repeated donations of useless, unusable or inappropriate equipment.

He is pleased that today a joint strategy is emerging towards better quality aid and hopes that this conference contributes to the overall structure.

Cathy Blanc-Gonnet, Director of Humatem, a non-profit organisation and co-organiser of the Equip'aid conference, has been committed for over 14 years to promoting the improvement of the quality of medical equipment donations. She states that quality healthcare facilities are essential to achieving the three Millennium Development Goals for better healthcare. In this context, support projects for medical equipment have a clear role to play. Involving different types of stakeholders with more or less sizeable resources, these projects generally have a common factor: they lead to medical equipment supply in the form of donations. However, they are complex and failures exist alongside successes. The Equip'aid conference must enable the compilation of an inventory of practices and work to be carried out on concrete measures for improvement.

Designed to promote information and experience sharing in complete transparency, this two-day conference is organised around four round tables in plenary sessions, alternating presentations and testimonies and nine workshop sharing sessions. [1]

[1] Only the round tables that were held in plenary sessions are included in this summary.

Round Table 1 – Overview and context of medical equipment support projects

There are many medical equipment support projects for healthcare facilities in developing and transitional countries and the stakeholders are extremely diverse. What are the practices and what are the impacts of these projects? Are they to be prohibited or encouraged?

"In some countries, 80% of medical equipment comes from donations but only 10 -30% is functional"

The picture that **Adriana Velazquez Berumen** (World Health Organisation) portrays by citing this significant figure and some key indicators of the state of global health is sufficient to understand the work that remains to be done to achieve the goal of universal health cover. An example: how can we tackle cardiovascular disease, the leading cause of death in the world, when many healthcare facilities do not even have a tensiometer?

In 2007, the World Health Assembly adopted the WHA60.29 resolution on health technologies to give Member States and the WHO a certain number of responsibilities, to organise information about medical equipment, standardise it or regulate its use. In 2010, priorities were defined for medical devices that must be available, accessible, affordable, appropriate, safe and effective.

In reality, new healthcare technologies are becoming increasingly expensive and difficult to use in the context of developing and transitional countries. The hidden costs of these new technologies (spare parts, commissioning, training and maintenance) are not taken into account.

The WHO introduced a pre-qualification scheme and developed documentation and regulation for the provision and maintenance of medical equipment. These projects show that much remains to be done to adapt the equipment to the realities of the field and to ensure its availability and access. Joint efforts need to be made by all stakeholders involved to develop sustainable solutions. It is in this perspective that, in the continuity of Equip'aid and in partnership with the conference organisers, the WHO is organising its second Global Forum on Medical Devices to take place a few days after the Equip'aid conference in Geneva.

The project is huge and the awareness of its urgency is new to the WHO. But initiatives are being introduced to improve the situation.

Robert T Ssekitoleko is a biomedical engineer in the Ugandan Maternal and Newborn HUB. His testimony is a vibrant illustration of the facts observed by Adriana Velazquez and with which he is confronted on a daily basis. Firstly he addresses the lack of training for technicians responsible for

maintaining the donated medical equipment. And for good reason, the equipment comes from multiple sources without any prior discussion or standards. Spare parts are difficult to find and donors generally offer neither support, nor training for users…

He saw how beneficial, when it exists, an ongoing relationship between the donor and the technicians can be, in terms of training or identifying a spare-part supplier. He recommends raising awareness among stakeholders and introducing appropriate regulations to ensure that the donations are indeed used.

The study conducted between 2010 and 2012 by **Bruce Compton**, Senior Director of International Outreach at the Catholic Health Association (USA), focused on donor practices and more specifically, US hospitals' use of their surplus medical equipment. The volumes are high but donations are often inappropriate. These unsolicited, low-quality donations of equipment, which are impossible to maintain, are particularly difficult for health services to manage in developing countries.

Intermediary organisations that collect hospital surplus and redistribute it to developing countries rarely have the capacity or sufficient resources to effectively manage operational constraints. Therefore the collected surplus needs to be sorted and requires biomedical expertise which is not always available. In addition, the lack of financial resources and needs assessments in the recipient countries negatively impacts the redistribution of collected equipment.

The study also shows that donor hospitals do not always have a good understanding of the benefits of the donations. Ultimately, nine out of ten members (knowingly) admitted donating small disposable medical devices whose expiry date had passed, and six out of the ten pieces of medical equipment were defective.

Working in partnership with an intermediary organisation seems to be one of the keys in strengthening donor programmes and improving their effectiveness. Therefore hospitals that work in partnership with such organisations donate three times more often. The scope for growth is also significant in this area. Only 8% of hospitals work with quality intermediary organisations and two thirds of those responsible for the equipment believe that their relationship with the partner can be improved.

Therefore, current surplus collection and redistribution does not meet beneficiaries' needs. The intermediary collection organisation sector is fragmented and lacks common standards, and the relationship between the donors and these organisations has not been sufficiently developed.

However Bruce Compton concludes on an optimistic note. "The situation is changing", he says. For example, during the recent emergency situation in the Philippines, not a single hospital spoke of donating used equipment.

Valentino Mvanga is a biomedical engineer in Tanzania. He works for the department of curative services in Health Care Technical Services, an international organisation focused on effective donation in Tanzania. He has identified two types of donation according to the degree of collaboration between the stakeholders involved. In keeping with Bruce Compton's findings, the

results of his study show that the impact is highly different, depending on whether the beneficiary is involved or not in the equipment selection process and contributes to its acquisition. He points out that when the donor supports the entire process, 50% of the equipment is not used due to lack of referent or training in the recipient's facility. Therefore a lot of equipment remains unused and is abandoned on the spot.

In light of this evidence, Valentino Mvanga calls on donors to collaborate with Tanzanian organisations to correctly identify needs and offer a true opportunity to local stakeholders, to ensure effective monitoring of the equipment received. He also lobbies for the provision of new, rather than second-hand devices for greater sustainability.

Komi Agbeko Tsolenyanu, sociologist and executive director of a non-profit organisation from Togo, adds to this overview by focusing precisely on the impact on the country's healthcare situation, of medical equipment support projects in non-profit organisations.

Although the donations help the decentralisation of healthcare in regional zones, strengthen the professional development of staff and offer vulnerable people better access to quality healthcare, they do not address all the needs. They present project coordination issues and the transfer costs put a financial strain on beneficiary organisations.

These results chart a roadmap for advocacy with Togolese authorities, donor partners in the North and beneficiary organisations so that quality community medicine can reach the greatest number of patients.

In Benin, **Charles Pascal Soroheye**, a hospital biomedical engineer at the Ministry of Health, focused on 92 pieces of equipment donated to a hospital in Bassila between 2002 and 2012. Currently, 27% of equipment does not work, 14% has never worked and 31% is out-of-order. Furthermore, only 16% of the equipment arrived with a technical manual and 40% with a user manual; staff were trained on only 23% of the equipment given. These very significant figures are again in keeping with the testimonies of Robert T. Ssekitoleko and Valentino Mvanga.

These donations present a serious maintenance problem to the beneficiary hospital, not to mention the management and destruction of irreparable equipment. These results once again call for clear, legally-binding partnerships to be set-up between donors and beneficiaries.

Emmanuel Zida is the director of infrastructure, equipment and maintenance at the Ministry of Health in Burkina Faso. His perspective on the procurement of material and equipment reinforces these observations. Wherever they have come from (NGO, decentralised or bilateral cooperation, state procurement policy), much of the inappropriate, incomplete and obsolete equipment ends up abandoned in the backyards of healthcare facilities.

The situation is not new and actions have been taken to formulate a charter of biomedical equipment donations, although it has not yet been finalised.

Discussion between speakers and participants

The first testimonies reveal the concrete reality of the impact of donations, from a beneficiary standpoint. This first round table also reveals how important it is for donors to acknowledge the issues that donations can cause. "**To share is not to get rid of. It is to give to the other what you also need yourself**." This wise remark expressed by a participant epitomizes what is at stake...

Should we therefore continue to accept donations of equipment from the North or refuse them following the example of Sudan? For many stakeholders, donation remains a necessity to make up for insufficient budgets within healthcare facilities.

That being the case, what should be set up to improve the pertinence and quality of medical equipment support projects and guarantee patient safety?

A clear consensus emerges on the need for distribution and implementation of the WHO's guidelines on medical equipment donations.

Other proposals were quickly proposed for beneficiaries, donors and organisations from the North:

Beneficiaries	Donors and organisations from the North
To implement local projects on equipment reuse and redistribution (eg. initiative developed in Tunisia and Libya).	To draw inspiration from good practices such as the methodologies and questionnaires developed by Humatem to improve needs assessment and ensure delivery of appropriate material to beneficiaries. Set up validation platforms for the equipment before dispatch.
To introduce more specialised training programmes in hospital management and maintenance (eg. programme introduced in Cameroon).	To finance the training of the beneficiary healthcare facility technicians, responsible for the reception and maintenance of equipment.
To draw up a list of necessary equipment depending on the type of healthcare facility, to avoid incompatibility of equipment due to the level of care provided.	To extensively evaluate the equipment (working order and availability of spare parts)
To only accept the equipment if the beneficiary healthcare facility is capable of using and maintaining it.	

The questions raised recall the debate on donated medicines 20 years ago which led to France adopting a law in 2007 that prohibits the dispatch of unused medicine.

However, as some people point out, the equipment sent, even when it is brand new, is not technically adapted to the conditions of use in beneficiary countries: it is not simple or robust enough and requires too much training.

NGO medical equipment donors are called on to persuade manufacturers and central buying offices to produce and provide appropriate medical equipment, genuinely adapted to the realities in the field.

In conclusion, **Adriana Velazquez Berumen** delivers the ten WHO golden rules, for all those involved in medical equipment donation, whether donors or beneficiaries :

- Use the WHO guidelines relating to medical equipment donations;
- Consult the list of medical equipment as defined by the WHO according to the type of healthcare facility;
- Check equipment before dispatch;
- Involve the engineers and technicians in the decision process;
- Engineers and technicians: make your voice heard;
- Set up assessment commissions to avoid receiving "dustbin donations"
- You have the right to say NO;
- Through the internet , connect with trained engineers around the world to assess whether the proposed donation is suitable or not;
- Call on regulation bodies to stop undesirable donations;
- Strive to develop innovative technologies to meet the needs of low-resource contexts.

To view the slides of the round table 1, click on the title in the table below:

Speakers	Title
Adriana VELAZQUEZ BERUMEN	Overview of the inequalities in accessing healthcare technologies
Bruce COMPTON	How can effective surplus donation relieve human suffering? presentation of the Catholic Health Association‘s study on hospital donations in the United States
Komi Agbéko TSOLENYANU	Impact of medical equipment donation projects on healthcare in Togo, difficulties encountered and perspectives

Round Table 2 - The regulatory and institutional frameworks for medical equipment transfer and their recent developments

Most medical equipment support projects include a devices supply component. However, the inventory submitted in round table 1 has highlighted the permanence and recurrence of non-ethical practices which can be risky for patient and user safety. Why do these practices continue?

Medicine donation comes under a strict international regulatory framework. What about medical equipment? Guidelines and good practice recommendations exist on an international scale - this is one of the findings of round table 1. However, they are not binding. What are the legal frameworks in force at national and international levels? Who are the stakeholders and what leverage do they have to implement them?

In the North as in the South, the framework governing medical equipment donation is changing, both as a result of the negative impact of unsuitable donations and of the indirect influence of the economic crisis and environmental issues.

"Encourage the logics of hospital partnerships"

Pascal Garel from the French Hospital Federation, in charge of international relations, points out that France is part of this trend. Firstly because in a general context of spending cuts, the government is trying at all costs to optimize the considerable budget that French hospitals spend on purchases (€ 18 billion in annual spending) and launched to this end in late 2011, a programme on hospital performance for responsible purchasing (PHARE programme).

Secondly, because the recovery and disposal of equipment are now at the heart of new challenges related to both the requirements of sustainable development (industry marketing strategies with the acquisition of the old against the new, European environmental legislation, new directives in French law) and the arrival on the market of new players such as companies involved in the purchase and resale of medical equipment.

These changes will inevitably have an impact on the 350 partnership agreements which exist between French and foreign hospitals and on practices for transfer and material donation.

Keen to improve practices, the French Hospital Federation is committed to reflecting further on the legal framework and to working with Humatem to raise awareness in French hospitals on the responsibility they bear on donated equipment. Encouraging the dynamics of North-South hospital partnerships to reinforce 360° cooperation, covering all hospital trades to ensure greater effectiveness, fits into this strategy.

"The progress in donation requirements says a lot about what used to happen ..."

Although specific, the French context is inevitably influenced by the European context. What exactly is the law in neighbouring countries and in the European Union? The study led by **Audrey Hernandez**, research manager at the European Hospital and Healthcare Federation (HOPE) confirms a trend in the right direction, of the expectations and requirements for medical equipment donation, without yet being able to speak of revolution.

Assessing current national legislation, there are actually few binding frameworks apart from Italy which, in 2005 passed legislation to create a governmental organisation responsible for promoting and coordinating medical equipment donations. Elsewhere, structuring elements for donation exist at regional level such as in Denmark and Sweden, but also in Ireland and Finland who have key guidelines.

While EU legislation has directives for medical devices there are none for donating these devices. One of them, directive 2002/96/EC, updated in 2012 (2012/19/EU) relates to the management and recovery of waste electrical and electronic equipment (WEEE) and therefore relates directly to a large quantity of medical equipment. It refers not only to the environmental impact in the interest of protecting human health but it also mentions "developing countries" for the first time. It lists minimum requirements "to avoid the unwanted transfer" of equipment that does not work, to these countries. These requirements which include notably the completion of performance tests (proof that the device is functional) and careful, appropriate packaging must be adhered to, or the transfer of equipment shall be considered illegal.

This directive must be incorporated into the national laws of Member States by February 2014. The United Kingdom has already begun the process, but it is a pity to see that the reference to developing countries has been removed. Although the donation of medical devices is addressed solely in terms of waste management, Audrey Hernandez welcomes this progress, while emphasizing the need to go further. Indeed, many questions remain unanswered: what body will monitor the implementation of the directive? What sanctions will there be for non-compliance? Will there be an accreditation system for organisations authorized to issue certificates that prove requirement compliance?

"Regulations adapted to each recipient country must be introduced"

The need to establish a framework and border control in recipient countries has been mentioned several times since the beginning of the conference. In fact, practices and tools are also evolving in this area of donation. Currently **Astrid Adriana Barcelata Pozos**, a project manager at the Investigación en salud y Demografia SC (Mexico) conducted a study that demonstrates this change: many southern countries are considering the implementation of policies or guidelines at a national level. What are the possible options?

Establishing economic constraints such as deterrent customs clearance costs to limit the massive influx of donations of medical equipment, as was done in Mongolia and Madagascar, is according to Astrid Adriana Barcelata Pozos, not such a good idea. In reality, it is an unfavourable measure for support projects that have not anticipated such costs and for those who do not have the means to meet the expense.

By choosing another path, in 1992 Argentina adopted an exemplary policy whose first step was the establishment of the National Administration of Drugs, Foods and Medical Devices (ANMAT). When the economic crisis erupted in 2001, ANMAT immediately responded by developing a website explaining the country's requirements and guidelines for donating medicines and medical equipment. The website defines more particularly the required and accepted medical equipment and obliges donors to make an initial contact, to ensure needs are confirmed and requirements are met (user guides, technical performance certificate, spare parts, etc.) before submitting a request for transfer authorisation. In parallel, the recipient organisation must justify that the proposed equipment corresponds to the organisation's needs. As a last resort, the country can reserve the right to refuse the donation for patient safety reasons.

Astrid Adriana Pozos Barcelata concludes that it is important for each country to take into account its own organisational capacity for setting up regulations that match its own circumstances.

The process which Benin has initiated to identify ways of effectively managing donations meets this requirement. The approach, as explained by **Adjaratou Maliki Seydou**, hospital biomedical engineer at the Ministry of Health of Benin, relies primarily on an inventory of current practices in Benin and an analysis of the issues raised by medical equipment donations. Assessments show that donations are still needed for Benin but that they need to be supervised.

These results drive the work of an interdepartmental committee appointed by the Council of Ministers to establish a regulation, which will draw inspiration from the measures taken in this area by Senegal and from the current donation charter in Madagascar, but will be adapted to the context in Benin.

A national policy on medical equipment including a section which deals with the issue of donations was set up in 2003 in Laos, with support from the WHO. After ten years**, Insal Thanom**, director of the medical products supply centre at the Ministry of Health in Laos, gives a mixed picture of the policy's results.

In theory, current policy requires that donated equipment be delivered in working order with its technical documentation and that spare parts are available. In theory, again, a cross assessment must be made to ensure that the equipment matches the needs before the donation is accepted. Finally, donations must be made in partnership and in consultation with the beneficiary organisation.

In practice these measures are difficult to implement, simply because it is impossible to refuse the equipment once it has arrived in the country and to return it to the donor. A coordination measure set up in 2008 led to improvement of the situation. However, donations continue to pass through the cracks and arrive directly at healthcare facilities, without meeting the criteria and without staff consultation, further reducing the impact and benefits for patients.

Discussion between speakers and participants

In light of these studies and experiences, it seems clear that, if no legal framework establishes the terms of medical equipment donation in both donor and recipient countries, the problems are condemned to repeat themselves. And where this framework exists, it still needs to be respected!

Confronted with the difficulties faced by beneficiaries who receive inappropriate equipment, some conference participants call on donors (institutional, private or voluntary) to conduct a real upstream evaluation on needs assessment, in order to adapt donations to needs.

Others reiterate the importance of donations for recipient healthcare facilities and worry that overly rigid regulations may undermine the goodwill of small donors (especially non-subsidised) by imposing a heavy financial burden, in terms of inspection or training.

In this multiplicity of actions and stakeholders, conference participants stress that the beneficiary states are sovereign, and that it is their responsibility to set up regulations on donation, determining country-level responsibilities of both donor and beneficiary.

In the work to be done, it is not simply a question of finding a balance to preserve the donation's value while instilling an indispensable ethical dimension. It is also necessary to adopt a global approach to bind donations (at the donor-country level) with the needs (at the recipient-country level), and to develop common tools to impose minimum quality standards for practice.

Beyond the regulations which everyone recognises as a necessity, several voices were heard deploring the supremacy of technology, largely inspired by Western standards, but unsuited to the contexts of developing countries.

To view the slides of the round table 1, click on the title in the table below:

Speakers	Title
Pascal GAREL	Management of decommissioned equipment in hospitals
Audrey HERNANDEZ	Overview of regulations on medical equipment transfer from European Union member states to developing countries
Astrid Adriana POZOS BARCELATA	Panorama of regulations currently in force on medical equipment donation for countries in transition or developing countries

Round Table 3 – Emerging themes and directions to reinforce medical equipment support projects

Beyond the observations and debates on the necessity for a regulatory framework, how can we perpetuate the impact of medical equipment support projects? And what are the necessary prerequisites in terms of human resources to achieve this?

« Delivering new equipment is not a sufficient condition to gain access to new technologies »

The question of lifespan and maintenance of donated equipment is a first line of approach. **Dane Emmerling** is a research associate and technical coordinator in Robert Malkin's Developing World Healthcare Technology Lab, at Duke University, (North Carolina, United States). Following an investigation carried out in three countries (Honduras, Rwanda and Cambodia) covering more than 800 pieces of donated medical equipment, he notes that when costs associated with equipment are estimated, training expenditure is rarely included. Yet, to improve the offer of healthcare and the work of medical facilities, it is necessary to both provide equipment and train staff.

The lessons to be learned are numerous and include: a follow-up of donated equipment from departure to destination point (14% of equipment studied never arrived at its destination), and subsequent set up, maintenance contracts (16% of donated equipment does not function despite the existence of a maintenance contract), the choice of new or second-hand equipment (in the medium term, the rate of functioning equipment that is new, is even lower than that of second-hand equipment).

Therefore, delivering new equipment is not sufficient for offering access to new technologies because, and this is the second important point of the study for decision makers and hospitals: to guarantee that a piece of equipment is used, the technicians must be trained to set up and repair the equipment. In Rwanda, hospitals whose technicians have been trained and have increased capacities (decision making, communication in the case of a problem, access to the supply chain for spare parts etc.) have seen the number of pieces of medical equipment that are out of order, decrease by more than 40%.

Partnerships set up for medical equipment support projects, offer a second line of approach.

"The greatest benefit of a partnership, is the recognition of technicians in the hospital"

Through her experience with THET (Tropical Health Education Trust), **Shauna Mullally**, consultant biomedical engineer, shows that a partnership is an excellent tool to reinforce capacities of staff in charge of biomedical maintenance. In line with the study carried out by Dane Emmerling, the objective of partnerships set up by THET is not only to train technicians and increase their skills, but also to reinforce their position and room for manoeuver within their function.

One-off training organized directly by the healthcare facility, training given in the UK, a course of studies leading to a diploma in the country where the technicians work in either public or aid networks - the choice of solutions and services on offer is wide to address demands as best and as rapidly as possible. In parallel to training, the partnership includes experience-sharing workshops with the British partner organisation, and personalized support between peers (the African biomedical technician can contact his/her British counterpart).

These small-scale partnerships are an inspiring influence to develop bigger projects, offering improved recognition of technicians and a greater ability of the healthcare facilities to maintain their pool of medical equipment.

As seen previously, the donation of equipment, even if new and fully-functioning is not the be-all and end-all. Participants have remarked several times on donated equipment not being adapted to realities in the field. Technologies designed for western healthcare needs, the difficult integration in healthcare facilities in beneficiary countries, and costs incurred for maintenance and training are part of the problem.

"Accelerating innovation in medical technology to improve health in low or middle-income countries"

Dr **Data Santorino**, Uganda country manager for CAMTech (Consortium for Affordable Medical Technologies) offers a different approach that aims to develop innovative medical solutions, adapted to low- and middle-income countries and to the healthcare needs of specific communities, notably those typically excluded from healthcare (rural zones).

Within the framework of a consortium that brings together partners from the medical technology sector around the world and an Innovation Café (a virtual platform for discussion and reflection where technicians, engineers, industrial and clinical partners can share problems, identify needs and consider solutions together), CAMTech groups together multidisciplinary research teams to develop appropriate medical equipment. After their first year, several prototypes are being developed.

The initiative still has some challenges to face. To remain sustainable, CAMTech's economic model must be based on a business strategy and rely on a promising market outlook. For this, CAMTech

must develop an entrepreneurial culture and address the question of intellectual property, in a context where support for emerging medical technology is limited.

To contribute to the tool box for medical equipment support project owners, several methodological questions must be addressed.

"It is not enough to do good, it must be done well" (Diderot)

Véronique de Geoffroy evokes the end of the age of romanticism with the "humanitarian gesture", when the gesture takes precedence over the result. With an increase in the funds granted, doubt has penetrated practices, at the same time as stakeholders have become conscious of the negative impact that aid can have (out of date or inappropriate medication, deconstruction of local markets etc.)

In the domain of medical equipment support, the question of quality also arises, for in this sector, the stakeholders must be accountable.

The analysis of medical equipment pools, constituted primarily from donations like those in Haiti, reveals the issues of medical equipment quality and compatibility with needs.

Yet, faced with chronic illness in emerging and transitional countries, the evolution of diagnosis techniques and epidemiological profiles, the acceleration of urbanization and the multiplication of lasting crisis contexts, it is crucial to find pertinent solutions to respond to an increasing need for medical equipment.

The work carried out by Humatem and Groupe URD, enabled the definition of six quality criteria and the creation of management methods for medical equipment support projects, based on questioning, in order to respond to the variety of contexts.

Certain emerging questions remain:

- Today, only ethics govern the quality of medical equipment donations. Is it necessary to set up a process of certification in line with what is currently in place for other sectors of humanitarian aid?
- Given the number of private companies that are present in the recycling sector with outlets in countries of the global south, how do international aid stakeholders see their role? In competition or complementarily?
- Healthcare systems need equipment that is increasingly costly, but with which economic viability? How do medical equipment support projects fit into this and should they contribute to the development of insurance systems in the aid sector?

How do medical equipment support projects integrate the notion of risk, to guarantee the continuity of care in contexts increasingly exposed to crisis?

Discussion between speakers and participants

In line with the first two round tables and the necessity for ethical practice within a regulatory framework, certain participants mention the "profile" of medical equipment donors. Often, they are not professional aid workers (familiar with the rules) but ultra-specialized medical experts, unable to step back and have the overall vision of the context in which they act. Some regret that biomedical technicians, key players in the monitoring of donation and maintenance of medical equipment are rarely consulted or therefore included in the dispatch process. To remediate this, they suggest creating bridges between technicians from the North and South, through networks and by setting up spare-part banks. A role for the WHO and Humatem?

The question of appropriate technology is raised once more. Creating solvent market conditions, reinforcing entrepreneurial skills in emerging countries, developing partnerships between players from industrial and medical sectors, and taking measures to encourage foreign investors to commit to innovative projects, will all contribute to the development of medical technologies that are affordable and appropriate.

Until these solutions are available, donations will remain necessary.

Several professionals remind conference participants that simple, common-sense measures exist to improve the lifecycle of equipment (for example, covering with clean sheets to protect from dust…).

To view the slides of the round table 1, click on the title in the table below:

Speakers	Title
Dane EMMERLING	Creating evidence-based interventions for increasing the lifespan of donated equipment and maintenance capacities: data from Honduras, Rwanda, and Cambodia
Shauna MULLALLY	Strengthening local competencies in biomedical maintenance: lessons learned through five medical equipment partnerships in Ghana, Ethiopia, South Sudan, Uganda and Zambia
Data SANTORINO	Panorama of medical technology adapted for developing countries and already available
Véronique DE GEOFFROY	The quality of aid in medical equipment support projects: from emergencies to development

Round table 4 – Sharing for better healthcare: tools, services and innovative initiatives for quality medical equipment support projects

In the North and South, innovative projects exist. They are all sources of inspiration to improve the supply of appropriate medical equipment or to support beneficiaries and medical equipment support project owners.

"Help those who help"

Despite recent measures, the different overviews presented in the round tables and testimonials paint a gloomy picture of medical equipment transfer. Improving the supply therefore remains a major stake.

The work of BITeB, an Italian non-profit organisation of which the biomedical division is managed by **Massino Maderna,** adheres to this approach. It sends decommissioned medical equipment to emerging or transitional countries, that has been reconditioned by Italian healthcare employees and is thus in working order, with guaranteed longevity (particularly availability of spare parts).

BITeB's missions include responding correctly to the requests of organisations that contact them and to the beneficiary healthcare facilities that they support. The non-profit organisation verifies the needs of the healthcare facility due to receive the equipment and identifies a local technical specialist. BITeB has a data base that lists key data country by country, essential prior to donation (water, electrical supply, customs duties etc.) Once the donation is complete, BITeB intervenes to ensure follow-up and staff training, the objective being to guarantee the safety and quality of equipment, while respecting the environment, and to deliver equipment that is useful and usable.

Since 2012, the service developed by BITeB faces competition from companies that purchase decommissioned equipment from Italian hospitals, with the intention of reselling it to developing countries, among others. Since 2005 and despite this factor 1,200 pieces of equipment have been delivered by BITeB to more than 40 countries. Out of those, only three did not work.

Sahlgrenka International Care AB, located in the Västra Götaland region in Sweden, and managed by **Anders Lygdman**, international aid coordinator, also offers a system for coordination of donated decommissioned medical equipment, with quality insurance. The aim of the service is to improve access to quality healthcare for patients in emerging and transitional countries.

Their structure however is unprecedented: the system is managed by a private company, authorized by the government and the region, who work in partnership with hundreds of healthcare facilities in Sweden, in the name of a single non-profit organisation (Human Bridge), and who subsequently manage the dispatch of equipment to the relevant beneficiary healthcare facilities. First a pilot study,

the project became a permanent fixture in 2010 and sends more than 500 freight containers of equipment per year.

Various initiatives are also in progress in countries that receive donations, to prevent "dustbin-donations".

"120 days to equip the hospitals and healthcare centres in Benin"

In July 2012, Benin launched an original initiative aimed at improving the quality of healthcare in the country, by equipping healthcare facilities with medical equipment via a call for donations.

Initiated by the Ministry of Health, the event was meticulously prepared and coordinated so that the donations received correspond exactly to specific criteria: identification of needs, catalogue of equipment required, communication to potential donors, coordination committee, etc.

At the end of the 120 days, 100 donors had responded and provided equipment from all medical specialties. Today, the donations have been dispatched to healthcare facilities, in accordance with identified needs, and other donations continue to arrive.

A study on the impact has not yet been carried out but the operation is considered a success, as it enabled the collection of medical equipment in a coordinated and controlled manner. The initiative is to continue on a permanent basis ("Every day to equip hospitals in Benin") and will also be rolled out in the secondary and higher education sectors with a call for donations of pedagogical material. An assessment of the initiative highlighted the need to better organize other services linked to the donation, like day-to-day maintenance and preventative maintenance of the equipment donated.

According to the WHO guidelines, all medical equipment support projects should ensure that a maintenance budget is available. In practice, the maintenance of equipment received is a real challenge for the counties and the staff in the recipient healthcare facilities.

"Make resources available to beneficiaries, to enable them to manage donations"

Andrew Gammie, consultant biomedical engineer, writes pedagogical manuals for technicians and users, so they can carry out informed first-level maintenance. A report shows that 80% of incidents are caused by incorrect use of apparatus.

The series of manuals published in English and Hindi, is based on this observation and on the fact that first-level maintenance can be carried out by the regular user on the spot, without major servicing. Each manual relates to a specific piece of equipment and includes illustrations, simple

messages, a summary of common faults in table form, and proposes a checklist of tasks to carry out on a daily or weekly basis.

The manuals have been tested. They will be fine-tuned and developed for integration into medical training sessions in Nepal.

Finally, prior to donation, providing support and advice to medical equipment support project owners, enables better management of the donation and improved impact.

« Supporting project owners to adopt a quality and ethical approach"

Aurélie Jeandron, president of Humatem, presents the various services developed by the non-profit organisation and offered to donation stakeholders (project owners, donating healthcare facilities, and beneficiary healthcare facilities in developing countries): the medical device bank for international aid providing a link between medical equipment donation supply and demand; Biomedon, a collaborative biomedical network offering technical services for equipment before dispatch to developing countries and finally the resource centre for medical equipment support.

The resource service develops technical, methodological and awareness tools, the majority of which is freely available on the organisation's website. As an example, the *Charter for medical equipment support project owners* recently devised by the working group "Medical equipment in actions of international cooperation" coordinated by Humatem, aims to federate stakeholders for codes of good practice and methodological aspects that signatories must commit to. It is intended to become a reference document in its domain and could inspire others, such as a charter for equipment donors for hospitals or manufacturers, for example.

The Equip'aid conference also enables Humatem to announce the official launch of the discussion forum *Info-Matmed – medical equipment and developing countries*, developed in collaboration with Biology Without Borders. The recently-created forum aims to encourage healthcare stakeholders from the North and South to discuss and exchange know-how on various subjects grouped by speciality, linked to medical equipment use in developing countries (decommissioning, packaging, set-up, training, maintenance etc.).

The tools developed in the resource centre contribute to improving recognition of the biomedical profession, faced with politicians and administrative bodies, to enable them to realize the essential role that biomedical professionals play all along the healthcare chain, as well as in the quality of patient care.

Discussion between speakers and participants

"Information alone cannot create change "

The different presentations highlighted a range of simple tools aimed at improving the quality of medical equipment support projects.

Yet, the testimonials provided by the speakers and participants at the conference demonstrate that bad practices are still present. Several participants show their surprise.

As the tools available do not have force of law, their use is unavoidably dependent on stakeholders' good will. A rapid show of hands in the conference room reveals that approximately half of the participants present are familiar with the existing guidelines and directives, but that ultimately, very few use them.

Consequently, the tools must be accompanied by training (Humatem organizes trainings on some tools) and be adapted and readapted to each context.

However, **Andrew Gammie** reminds us that "information alone cannot create change - we also need efficient communication and leaders", and invites each and every participant to share these tools and become an agent of change.

A participant asks if ultimately, it is not also up to the beneficiary countries to define, like Benin, their own guidelines and tools adapted to their reality.

A resolution, prepared during the conference by 25 African representatives upon their own initiative, was presented at the end of this round table and addressed to the organizers and the WHO. It calls for, among other things, the organisation of an African conference on this same theme and specifically insists on the necessity to draw up a donation strategy (including questions of pertinence, regulations etc.).

To view the slides of the round table 1, click on the title in the table below:

Speakers	Title
Massimo MADERNA	A new life for decommissioned medical equipment in Italian hospitals
Anders LYGDMAN	The Region Of Västra Götaland: An example of a coordinated system for the donation of surplus medical equipment for international material aid (Sweden)
Adjaratou MALIKI SEIDOU	Presentation and assessment of the initiative "120 days to equip the hospitals and healthcare centers in Benin"
Andrew GAMMIE	Maintenance of medical equipment by users: a manual for first-line maintenance
Aurélie JEANDRON	Services and tools developed by Humatem, available for all medical equipment support project stakeholders

Presentation of Sharing Sessions (SP)

In addition to the round tables, 9 sharing sessions (workshops) took place during the two days of the conference. To view the presentations those were held in sharing sessions, click on the corresponding title in the table below.

N°	Name of the Sharing-Session	Speakers	Title of the presentation
SP 1	Medical biology – laboratory testing	Thinn Thinn HLAING	Need assessment of Blood Gas Analysers in Yangon General Hospital & New Yangon General Hospital, Myanmar
		Pierre FLORI	Transfer of competencies, experience and medical biology equipment: 20 years of "Biology Without Borders"
		Jean-Louis MACHURON	Equipment exchange, a project from the Mérieux Foundation and Platform for Integration through Humanitarian aid and Cooperation
SP 2	Dialysis	Jean-Pierre GARCIA PEREZ	Development projects for dialysis in a humanitarian and socially responsible context
		Serge GALLIOU	Kidney failure in the Ivory Coast
		Vincent NGALEU TOKO	Two approaches for installation and set-up of hemodialysis centers in Cameroon: a donation convention with Worth and public-private partnership
		Jaeho SHIN	Experience of the Korea Medical Equipment Supply Center (KMESC) in dialysis
SP 3	Surgery and anaesthesiantensive care	Emmanuel KOUEMO TCHOKODJEU	Efficient transfer of medical technology in cardiac surgery. Example of the Shisong Cardiac Centre
		Philip AMOKO ANYANGO	ORET'NL project : strengthening of 23 hospitals in Kenya in the field of surgery anaesthesia
		Jacqueline PAYRE	The children of Noma, 10 years in West Africa in maxillo-facial surgery and orthopedics
		Hugues GAERTNER	Equipment support for operating theatre in emergency and post emergency situations
SP 4	Oral healthcare and ophthalmology	Souleymane BOUGOUM	Equipment as a key factor for access to essential dental care in Sub-Saharan Africa. Example of Burkina Faso
		Aziz DRISSI	Sight for life: Commitment of an NGO, the government and local partners in Morocco
		Nicolas GERAKIS	Training staff as a key to success for eye-care service development projects
		Jean-Marie JIGTE	Community health in rural zone in Cameroon

SP 5	Hospital furniture, technical aids for disabled people and small devices for examination and treatment	Dr. Mamadou SOW	Donations of medical equipment: pertinence, key factors for success or failure
		Jennifer BARRAGAN	Donating basic equipment for health centers in Ethiopia: challenges and lessons learned
		Olivier VALLON	Loaning small items of medical equipment, from emergencies to development, good practices (apparatus, support, follow-up)
SP 6	Different approaches for training medical, paramedical and biomedical staff	Robert T. SSEKITOLEKO	In-house mentorship and training of hospital technicians to improve technical skills in Ugandan hospitals focusing on maternal and newborn health
		Daniel MILLIÈRE	Two projects to favour recognition and competencies of biomedical personnel in Senegal
		Alusine Bobson KABIA	In-Country biomedical engineering training course for technicians, in Sierra Leone
SP 7	Health technology management: which organization and policies?	Victor SONTEA	Development of health technology management in the Republic of Moldova
		Claudio ZAUGG	Integrated approaches towards better management of health technology in Eastern European Healthcare Systems: the experience of Moldova
		Dr. Baset KHALAF	Medical equipment maintenance and health technology management in South Africa: a new approach for skills development and proper utilization
		Isabelle BRISSON	Set-up of a management system for equipment maintenance: the experience of Nantes teaching hospital and the Saint-Antoine de Jérémie hospital, in Haïti
SP 8	Medical technologies adapted for developing countries: the reality	Steven DAGLISH	The need for locally designed and manufactured appropriate healthcare technologies in developing countries: a case study comparing locally with remotely developed, pre-term incubators
		Hervé GOUYET	Energy efficiency in healthcare
		Paul FENTON	A new type of anaesthesia machine for developing countries: overcoming the obstacles
SP 9	Audiovisual screenings documentaries film	Jennifer BARRAGAN	The power and potential of medical devices (Switzerland, 2010, 7 minutes)
		Andrew JONES	Medical equipment donations from UK organisations and partnerships: what works well and what doesn't? (Great-Britain, 2013, 25 minutes)
		Bruce COMPTON	Medical Surplus Recovery, First Do No Harm (USA, 2012, 8 minutes)

Conclusion

« The patient, at the heart of Equip'aid's work. »

During their closing summary, **Christian Troubé** and **Guillaume Battin,** the two journalists moderating the round tables both acknowledge that the value of sharing was particularly prevalent during the two days of the conference, and underline the transparency (openness, generosity of information and conviviality) as well as the pragmatic discussions.

All stakeholders agree on the necessity to work together in order to progress and improve the quality of medical equipment support projects. The Equip'aid conference is part of this dynamic.

During the very first round table, the WHO reiterated that it was eager to tackle problems, and the donors presented a lucid, constructive auto-criticism of their own practices. Testimonials from beneficiary organisations painted a clear, overall picture, sometimes very moving, of the situations with which they are faced, and proposed solutions.

What must we retain from these two days?

- Responsabilities:
    - For donors: beyond equipment delivery, they must start listening to needs and correlate the needs with donations. They must establish balanced and intelligent partnerships.
    - For beneficiaries: they must impose their ideas, demands and criteria but also facilitate the involvement of those who have the skills (community, technicians etc.)
- Procedures:
    - National regulations and sources of inspiration to develop them (examples from Argentina, Italy)
    - Pursue the reflection on the necessity for international regulation (who defines and supports it? A role for the WHO?
    - Certifications: Should equipment be certified? Is it necessary to implement standards for equipment, transportation?
- Solutions :
    - Adapt the equipment to the context: put pressure on manufacturers and encourage local production; adapt training.
    - Access information and develop discussion networks: valuable contributions that each member can offer and receive. This applies both to local platforms (in the North to centralize donations for example) and internet platforms to accelerate the exchange of information.

The value of the conference also stems from something that participants, whether beneficiaries or donors, have always kept in mind: the patient needing care, who has been at the heart of discussions for the two days.

"Greater responsibility and higher quality in medical equipment support projects"

On the organizer's side, **Cathy Blanc-Gonnet,** (Director of Humatem) remarks that if medical equipment support projects remain a need and are expected, they can no longer be under any conditions.

To be efficient and improve healthcare, projects must be carried out with greater responsibility and of higher quality:

- Adding responsability:
    - Through strong commitments from the North and South
    - Through partnership conventions that formalize the responsibilities of each project stakeholder
- Adding quality:
    - Through a professional and structured approach to carry out the project
    - Through systematic performance tests prior to dispatching equipment, to improve the technical quality of equipment transferred and avoid waste at all costs. The European framework seems to be moving in this direction.

These advancements however, cannot happen without the strong involvement of biomedical personnel. Engineers and technicians are the key players in this process, but unfortunately are too often absent! They must be integrated, in the North as in the South, at every step of the medical equipment supply chain: needs assessment and infrastructure capacity, choice of equipment, maintenance and management of the equipment's lifecycle.

Their skills must be reinforced (training etc.). But they must also strive for better acknowledgment, and federation through professional bodies.

Cathy Blanc-Gonnet also underlines that with no more than 800 days to go before the 2015 deadline, the Millennium Development Goals will not be reached. New sustainable development objectives are being outlined for after 2015. It is therefore now and together that we must fight to convey the messages that spring from the work carried out during this conference:

- Healthcare technologies must be considered as complete components of healthcare systems
- Considerable efforts must be made for technologies to be adapted to needs and available to all
- The biomedical profession must be recognized as a key player in the healthcare chain.

"Do not let the snow cover our footsteps!"

Pascal Garel, Executive Director of HOPE, evokes the follow-up to this two-day conference, and the messages he will transmit to European hospital facility HOPE members and policy makers.

Patient safety and the environmental question are challenges around which we can articulate these messages and transmit them to European Union institutions (European parliament, directorates general for development and health that produce legislation), as well as to manufacturers (who produce medical equipment).

In parallel, HOPE will distribute the results of these two days, at two events organized in 2014, in January in Mali and April in Burkina Faso, and will also share them with hospital networks elsewhere in the world.

Before closing this first Equip'aid conference, the organizers warmly thanked all those who played an active role in the meeting: speakers, participants, moderators, institutional and financial partners and their teams.

Memorandum of the African Group

The African Group of participants at the conference held in Chamonix Mont-Blanc (France), which met separately in the presence of the people listed below, would like to thank Humatem and its partners for the initiative and organisation of this conference on the theme of sharing to improve healthcare.

Whether in an emergency situation or not, the notion of donation requires a better framework.

A partnership relationship between the donor and beneficiary is necessary to ensure that goods (donated equipment) are fully functional in their new environment. To this end, new constraints are necessary, that require Africa, principal destination of aid from countries in the west, to organise and harmonise its way of thinking on this subject.

This new regulatory approach should be present in national policies on healthcare technology in various countries.

Beyond the debate opened in Chamonix Mont-Blanc, the African Group present at the conference would like the organisers and all partners in the healthcare sector, to sponsor the organisation of an African conference on the theme of: Supporting the equipment of healthcare facilities in Africa, what strategy for donations?

Subtopics:

1. Pertinence of the donation or transfer
2. Efficiency of the donation through categorization of equipment being transferred
3. Criteria for appreciation or relevance of donation
4. Criteria for a successful transaction
5. Regulation of donation:
    a. The donor (project owner)
    b. The beneficiary (choice, comparison, expertise)
    c. Partnership (expertise, impact, synergies, certification)

Process and methods will be defined by the network of participants.

The following participants and signatories appeal for this conference to be held in one of the African capitals mid 2014: Nouya Bethel (Cameroon), Younga Solidaire, Komi Tsolenyanu (Togo), Futy Yeka (Congo), Charly Gabriel Mbock (Cameroon), Clothilde Drogba (Côte d'Ivoire), Alusine Bobson Kabia (Sierra Leone), Robert Ssekitoleko (Uganda), Sam SB Wanda (Uganda), Salomé Mwaura (Kenya), Valentino Mvanga (Tanzania), Séverina Shirima (Tanzania), André K. Deguenon (Benin), Eloge NGoa (Central African Republic), Philip Amoko Anyango (Kenya), Martine Leclercq (Cameroon), Albert Gnanwo (Benin), Pascal Soroheye (Benin), Adjaratou Seidou (Benin), Ngoyi Ngoma (Congo), Mamadou Saw (Senegal), Awa Ndiaye Diouf (Senegal), Jean-Marie Jigte (Cameroon), Vincent Toko Ngaleu (Cameroon), Ousmane Sano (Senegal), Souleymane Bougoum (Burkina Faso), Peter Matoke (Kenya), Emmanuel Kouemo (Cameroon), Jean-Yves Sagbo (France), Lassissi Marouf (Togo), Irénée Nissao Napo (Togo), Aïssatou Sow Tourée (Guinea), Ahamada Said Fazul (Comoros), Mirko Kiasongulua (France).

If you wish to obtain the email addresses of these participants and signatories, please contact **M.Nouya Bethel** : nouya.bethel@yahoo.fr

With the support of ***WHO***

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EuropeAid action plan DCI-NSA/2009/2005-811 entitled "Strengthening cooperation tools and structuring the dialogue between donation stakeholders holders in the provision of medical equipment – To improve practices in medical equipment support projects for healthcare facilities in developing countries." The contents of this document are the sole responsibility of Humatem and HOPE and can in no way be deemed to refl ect the European Union's point of view.