

## Health logistics is a profession: improving the performance of health in developing countries

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**Abstract.** *“We can now prevent or treat most illnesses by using known and inexpensive techniques, the problem lies elsewhere: it consists in providing personnel, medicines, vaccines and information to those in need, at the appropriate time, in sufficient quantity, reliable and sustainable manner, and at a cost acceptable”.* WHO’s report “Health and MDGs for development”

*“Given the recognized need for health logistics officers and the present lack of such officers in the countries, WHO/AFRO, UNICEF, Bioforce and partners should urge countries to create positions of health logistics officers in health management teams, coordinate their efforts and mobilize necessary resources to initiate adequate training in logistics for health in support of present move toward greater integration of public health interventions”.* Task Force on Immunization Meeting, Maputo, 2006

### 1 Background

Since 2004 there has been a rising consensus on the necessity to strengthen support for health structures in developing countries.

The health situation in many African countries and at regional level is characterized by serious flaws. Very low human development indices, health being a major factor, reflect a critical situation, characterized by a lack of material and human resources and access to health services. Moreover, the use of these scarce resources is not optimized.

The resulting morbidity and mortality rates are high, particularly for children, due to the weakness of the health system and the persistence of significant risk factors (unhealthy environment, lifestyles, inadequate and unbalanced diet). This fosters development of infectious and parasitic diseases and the rapid spread of HIV infection. Apart from the human consequences, this has a significant negative impact on socio-economic development. For these reasons, health care is one of the priority sectors for governments of developing countries, particularly in Africa; above all, developing health is a prerequisite.

The lack of resources is exacerbated by problems of governance and management of available resources which lead to:

- Poor quality of health services, related to overworked, poorly trained and poorly organized staff,
- Late or insufficiently effective responses to epidemics and natural disasters,
- The waste of scarce resources (such as vaccines poorly preserved),
- Insufficient vaccination coverage and high infant mortality rates.

As a consequence, unacceptable living conditions continue to persist.

Global initiatives, such as the Millennium Development Goals, the Global Fund, Roll Back Malaria etc. try to address this situation through implementation of protocols and recommendations. Similarly, several international aid agencies’ investment plans give priority to the health system and tend to improve its operation.

WHO, for its part, provides support to countries reforming the health sector, introducing national health plans and strategies to facilitate access to quality medicines at an affordable cost.

WHO also wanted to increase training in “Logistics” so that health care could be provided with better efficiency and at lower cost. At the 2004 “Task Force on Immunization Meeting” in Bamako WHO started discussion with specialized partners. Bioforce, a non-profit institute created by



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Charles Mérieux<sup>1</sup> in 1983, has been providing training in support functions, particularly logistics, to aid organizations for more than 25 years. Bioforce is linked to 'Association de Médecine Préventive' and to the 'Liverpool School of Tropical Medicine'. The three organizations team to conduct operations and training programs, including a Master's program<sup>2</sup>. They operate in the field of health and logistics in Africa with African partners.

Based on its own experience, the Institute estimated that providing "technical training in logistics" only might not have the expected impact on health operations. Training is not effective if the organization is not adapted to the context, nor if the person trained is not assigned to a relevant and long-lasting job. A study was recommended to understand what the problems were and what solutions could be found. Funded by WHO HQ & AFRO and by its local Regional Government<sup>3</sup>, Bioforce conducted an evaluation during 2005–2006 with technical support from AMP. The focus was initially French-speaking African countries before enlarging the findings to other parts of Africa in a second phase.

## 2 The assessment

Five countries were selected for field investigations, in addition to general research on other available data. The panel represented various samples of the situation on the continent: Chad, DRC, Madagascar, Benin, and Burkina Faso.

In accordance with Bioforce's Vision and practise, the assessment was conducted with the idea that the problem concerned several organisations or communities involved in health operations, such as governments, civil society operators and NGOs, and therefore that the focus of the investigation should be wide enough to create synergies later and apply economies of scale. In addition, animal care should be included from the start.

In each country experts interviewed Ministries of health's (MoH) representatives from top positions down to the District Level, National and International NGOs, WHO and

<sup>1</sup>Charles Mérieux (1907–2001) dedicated his life to preventive medicine and vaccinology, with unshakeable enthusiasm, determination, and imagination, nevertheless always based on the Pasteurian tradition. Said he: "Beginning with a very modest laboratory and above all a bioethics to which I always remained faithful, I have experienced industrial virology with the same passion as my father experienced the epic of Pasteur. I've gone from the glass bottle to the steel vat, from foot-and-mouth disease to polio, from animal production to cellular engineering." "But after the vaccination of a hundred million Brazilians against African meningitis, I understood that it was also necessary to teach capable men to lead a new health politic and develop the concept of vaccinology..."

<sup>2</sup>Bioforce: [www.bioforce.asso.fr](http://www.bioforce.asso.fr), AMP: [www.aamp.org/](http://www.aamp.org/), LSTM: [www.liv.ac.uk/lstm/](http://www.liv.ac.uk/lstm/), Muraz: <http://membres.lycos.fr/centremuraz/>, IRSP: [www.irsp.bj.refer.org/](http://www.irsp.bj.refer.org/), HPM: [www.bioforce.asso.fr/formation/PM/HPM2008.pdf](http://www.bioforce.asso.fr/formation/PM/HPM2008.pdf)

<sup>3</sup>[www.rhonealpes.fr/](http://www.rhonealpes.fr/)

West African Health Organization representatives, agencies purchasing medicines, stakeholders in animal medicine, donors, doctors and technicians, universities and training institutes<sup>4</sup>.

There was a widespread support for this investigation, and a global consensus on the importance of logistics, though the concept was not yet formalized at the time. From its experience in training in the Aid environment, Bioforce Institute was aware that the term "logistics" was confusing because if its commercial meaning was well known, its use in Aid operations referred to different functions. Working in the late 90s with NGOs, Bioforce defined two specific Support Functions for Aid operations, which were necessary for Aid operations to perform: "Administration" and "Logistics" both used as specific terminology relevant in operations and training. Indeed, the Institute established and formalized the framework for the profession of "Aid Logistician". Comprised of a job description and 8 "core competences", this definition of Aid Logistics<sup>5</sup> is now recognized by the Aid community and international organizations such as WHO or UNICEF; former Aid Logisticians occupy various positions, including EPI<sup>6</sup> logistician at the national level. Based on a French National Certification procedure which is well known in this part of Africa, the profession of Aid Logistics has unquestionably helped to structure Aid operations. It has contributed to professionalising the sector, raising the standards of efficiency and allowing specialized Aid workers to focus on their trade (patient care, nutrition, water, agronomy and of course all sorts of emergencies) with efficient support.

With this prior experience, they reckoned that the lack of an equivalent reference for Health operations might explain why the existing training sessions in "Logistics" did not lead

<sup>4</sup>The Ministries of Health (Chad, DRC, Madagascar, Benin, Burkina Faso): Secretary General, General Directorates (Health Activities, Health Protection, Infrastructure and Equipment), Directions (Fight Against Diseases, Development of Primary Health Care, Promotion of Health, Human Resources and Training. Directions Program (EPI: Directors, Division Heads), Heads of Services (Logistics, Emergencies and Disasters). Regional Directorates of Health (Directors, Heads of program). Chiefs District Doctors. Central Pharmaceuticals

Training Institutes; Public: School of Public Health, Higher Institute of Applied Technologies (ISTA). Private: Training Center and medical support (CEFA), Centre formations (ISCAM), Regional Institute of Public Health (IPH) International Co-operations: European Delegations, Program 8th EDF, the French Cooperation, the French Development Agency (AFD), USAID International Organizations; the World Health Organization, UNICEF, The World Bank, UNDP NGO's and Missions: Doctors Without Borders, World Vision International, SANRU III, Catholic Relief Services (CRS), Health Net (Madagascar) Settlement of evangelical churches and missions in Chad (EEMET).

<sup>5</sup>Aid Logistician [http://cncp.gouv.fr/CNCP/fiche\\_gp.php?idfiche=1755](http://cncp.gouv.fr/CNCP/fiche_gp.php?idfiche=1755) and Aid Administrator [http://cncp.gouv.fr/CNCP/fiche\\_gp.php?idfiche=1756](http://cncp.gouv.fr/CNCP/fiche_gp.php?idfiche=1756)

<sup>6</sup>Expanded Program on Immunization

to expected results. Also, that to propose ad-hoc training without a coherent plan would result in additional frustration instead of bringing results.

Therefore from the beginning the study looked at training but also at other aspects such as organization, processes, and Human Resources Management (HRM). There is no point in training someone who would move to other responsibilities soon after getting the training, or occupy positions where a focused training would not be relevant, or placing well trained personnel in an organization unable to provide good support.

The assessment looked into the following aspects:

- The current situation of health logistics in the sample countries,
- Organization of logistics within the Ministry of Health,
- Elements of health logistics,
- Roles and responsibilities of the persons tasked with logistics functions,
- Skills areas and fields of competence, bases for future trainings,
- Proposal of a training plan in order to strengthen skills and expertise,
- Proposal of an operational training plan including methods of implementation.

Generally speaking the interviews showed very few differences but shared a large consensual base.

Two differences are worth mentioning. a) Some of those interviewed emphasised their immediate concerns, i.e. provide short term training for subordinates in charge of one or several aspects of logistics. b) Some had different definitions of Logistics based on the level of responsibility, i.e. District level Vs Central/National; this generally went with a priority given to the national level.

However, the discussions showed a large consensual base:

1. The importance of support functions and of improving health logistics, and the acuteness of the current situation,
2. The fact previous training solutions had not proved to be successful,
3. The added value of health logistics was defined and recognized as a profession,
4. The fact that logistics is a transversal matter, and should be addressed as such i.e. not through PEV/other illnesses/Animal Care/MoH/NGOs...
5. The necessity to plan HRM in addition to training,

6. The fact that the logistician was a manager, though logistics itself demands a technical background.

Based on the consensus the study concluded that a global solution was at hand proposing two specific innovations, and submitted an implementation plan to improve health logistics in Africa.

The key innovative proposals are:

- That health logistics should be recognized as a profession, relevant to all developing countries, and that infrastructure organizations should include Health Logistician positions;
- That training and expertise in health logistics should be organized as a network, run by a steering committee connected to field operations through specific nodes at the sub-regional and national levels.

It was also proposed that the primary focus should be the district level, as opposed to the national level, and that though “on the job training” was key to short term results, establishing pre service training was as important from the start both as a backbone of the profession and as a reference for all other training.

### 3 The profession of health logistician

As to the difficulty of creating a new profession when MoHs currently manage more than 40 different specialists, it is submitted that the Health Logistician will deal with numerous functions that are currently either burdening the doctors and nurses themselves, or divided among other personnel, or not addressed at all. Indeed, the Health Logistician represents an additional job at the district level. Considered a key element to improve cost efficiency, the sooner this job is implemented, the greater benefits will accrue to health programs of all kinds. The question is not how much it costs, but rather how much it will save, not to mention improve patient care.

As adopted by WHO and UNICEF at the consensus seminar held in Ouiddah, Benin, in June 2008, the definitions of the health logistics and logistician are the following.

Health logistics is the function which deals with the use of material resources essential to the efficiency, quality and cost-efficiency of health activities within the programmes and structures (in satisfactory conditions in terms of safety and security). The Health Logistician is responsible for optimizing the use of technical means and material resources available to health systems for efficiency, quality and traceability of health operations. Though with technical knowledge and practical experience, he is first a manager and coordinator of logistics. The function of logistics is transverse.

The job description further takes into account specific social skills: rigour, open-mindedness, analytical capacity, good interpersonal skills and ability to work in a team. A health logistics officer should also be able to communicate

his know-how through teaching methods suited to each audience.

The officer supervises the implementation and follow-up of logistics in the context of programmes and operations on the ground. He or she analyses the tasks to be accomplished, coordinates teamwork, plans and organizes future activities and facilitates the administrative and financial monitoring of logistics activities.

Health logistics is a multi-sectoral function consisting of a number of different programmes (integration). It may, and should be, incorporated into the organization charts of public institutions (Ministry of Health), international organizations (WHO, UNICEF, etc.), NGOs (Oxfam, MSF, etc.) and private bodies and enterprises.

The health logistics function both at the central and intermediate levels involves the skills, knowledge and professional competencies reflected in the seven fields of competency that make up the job description.

The different skills sectors of the Health Logistician are based on 7 key areas of expertise:

1. Plan logistical activities of health structures and programmes at the district level.
2. Administrate and coordinate logistics of health programmes and structures.
3. Manage the supply chain.
4. Coordinate the use, maintenance (including subcontracting) of medical and technical equipment.
5. Coordinate the maintenance of facilities and housing, including water and sanitation of health structures.
6. Ensure effective logistical support of Health Emergencies and Humanitarian operations.
7. Foster intersectoral collaboration and community participation.

#### 4 Training and expertise in health logistics organized as a network

To achieve results at a continental level it is necessary to start with existing initiatives and structures<sup>7</sup>, and to focus on developing and steering existing capacities to orientate training

<sup>7</sup>Almost all of these training programs except applied technology schools are characterized by the absence of a specific treatment of issues related to logistics health. An exception exists in Madagascar, but coverage remains low. Obviously technology schools treat the physical aspects of equipment maintenance of hospitals and laboratories, but unrelated to the whole supply chain. The number of technical graduates integrating public health is very limited, their main destination being the private sector or education. The courses dealing with issues related to the logistics of health are found mainly in the form of training, and almost exclusively in the field of vaccination programmes. Two key features are the Guidelines for the

and expertise in a specific direction. Steering means sharing a common objective and establishing a process through which lessons are learnt, and result in technical adjustments. A particular emphasis is put on quality control, referring to a pre-determined referential.

Thus the recommended implementation strategy consists of creating a network of Regional Training Reference Centres (RTRC) with a central coordinating body and a geographical attachment area within a sub region. This will serve to bring neighbouring countries together to share expertise, training and resources<sup>8</sup>.

Expanded Programme on Immunization (EPI), adapted by countries (e.g. Management Technique EPI-DRC), and the course of Middle Level Management MLM (WHO). These courses are taught either in the form of inter-country courses, or at the national level. It adds training courses for trainers.

<sup>8</sup>The main purpose of the reference centres will be to:

- Provide basic training leading to a diploma in health logistics; the content of the training will be in line with the job description for health logistics officers.
- Conduct complementary training activities (on the job, ongoing, supervision).

To this end, they will:

- Train trainers who are competent to draw up and implement training programmes, workplans and modules on the basis of the needs identified and prerequisites, and to coordinate and ensure the consistency of “delocalised” training activities.
- Train serving staff who perform logistics duties but are not available for long-term training and thus require specific training (intermediate level or central programme).
- Facilitate project implementation in general (set up country-specific training programmes, oversee subsequent stages);
- Set up a technical support structure (expert committee);
- Collect and evaluate feedback;
- Coordinate activities to enhance logistics capacities at the district level while the project gathers momentum (2 years) and draw lessons from feedback.

Synergies will be established between the core, which consists mainly of the Ministries of Health, and:

- all organizations involved in public health programmes and other programmes (HIV, malaria etc) and those requiring project design and management competencies;
- civil service fringe professions and related posts within NGOs (pharmacists, maintenance technicians, hospital management staff);
- for non-medical disciplines (management, financial administration, human resource management...) providing support to medical professionals (doctors, nurses and laboratory assistants)
- reinforcement of mechanisms for emergency management and population assistance.

The RTRC will bring together Universities, Training Centres and research & development within the region. Itself a reference at the sub regional level, the RTRC as a node of a network is to be led by a steering committee which will define and later adjust the referential, ensure quality standards and use of standard operating procedures are respected, and process feedback of experiences.

Similarly the existing European network of training organisations together with the African network will create a rich diversity of training and resources that is internationally recognised.

The combination of the steering committee and the Euro-African networks as described above will evaluate the experiences at each stage and will share important developments that will keep the training updated and dynamic, in line with the most recent public and private initiatives in public health.

The different training components within the overall plan will be transversally linked with one another in order to optimise human and material resources. Exchanging relative strengths, for example between countries, will also enrich the trainings concerning themes and experiences and lessons learnt.

## 5 Training organised on a modular basis for flexibility and accessibility

The strategy proposed is to design a training based on the 7 key areas of expertise, set up as a pre service training. A modular design (7 modules) will take into consideration the diversity of training needs of the target groups and the use of time available for the learning process. Thus, this pre service training will also compose the training referential for on the job training as well as the backbone of the profession. This referential is not geographically anchored, and is to be used nationally, though for cost efficiency concerns the pre service training as a whole should be provided only in the RTRC.

Three types of training are to be set up:

1. Short training lasting 1-4 weeks for employees already holding the job in order to improve their particular area of responsibility. This training would be specific, focused and related to the job responsibility held.
2. Pre service diploma training at the sub regional level interspersed by practical on the job training.
3. Higher level training to be part of the system of higher education. This would consist of medium and long term courses. The objective is to provide a pool of young trained personnel for the Ministries for Health.

The contents of the courses are to be determined directly by the learning objectives of the target group and their conditions. In the case of the particular modules as described above, sessions will be selected from the 7 modules to ensure that training needs are met appropriately.

## 6 Risk management

With the implementation strategy comes a financial requirement which decreases as the consensus on Health Logistics enlarges. Ultimately it is expected that the training programs will be self sustainable, on a national basis, the funds being included in each countries' programming (including demands for International cooperation) or as part of specific health programs. Indeed, there is a new and general awareness about the need for a greater emphasis on medical logistics to support large health programs at every level. It is important to avoid past errors of previous investments in health programs. Training must be linked (integrated) to an overall structure, rather than on a programme basis. Such errors have led to a wasteful use of resources. To strengthen Health Logistics in specific areas while supporting all other programs, will improve efficiency and the confidence of donors leading to greater investment in better working systems.

The overall cost assessment of the program is to take into account the savings that will occur through improved efficiency and asset management of health programs.

"Brain Drain" is the second risk of any training program. It would result in trained persons seeking rapid promotion, leaving rural posts or going abroad. The primary answer, as confirmed by the opinions of people met during the assessment, is that brain drain is less of a problem amongst personnel not directly involved in patient care than nurses and doctors.

Furthermore, logistics is an area where project supervision/mentoring will make a job attractive even in rural areas: for example, the possibility for an individual to contract on a part time basis for private services. The project will be lobbying for stronger HR policies within the Ministry of Health structure in order to retain trained personnel in the job for longer periods, with penalties for those who move on before time but also with appropriate incentives.

The risk can also be offset by appropriate staff retention policies. Newly trained managers, supervision, and improved HR policies, will help to reduce the risks of persons leaving rural posts early. Nonetheless, some additional persons will have to be trained to account for contingencies.

Finally, an important component of the management training is how to contract out in a transparent manner according to international business standards. This constitutes a key to the success of action in rural areas. This will ensure that policies for contracting out to private enterprises will be adequate.

## 7 End result

In conclusion, we advocate a consensus among African States and International Institutions that health logistics, as defined by the 7 key areas of expertise, underpin public health operations. Appropriate organisation will permit good governance and quality management linked to logistics. Two

fundamental principles for success are the achievement of synergies (technical and economic efficiency) and cross linking between programmes and services. Health logisticians will be posted at central down to the district (rural) levels. These people will be trained through pre service training in the 7 key areas of expertise and 'on the job' training. The trainings are to be implemented in a coherent manner, involving various training providers (Universities, training centres etc).

The Ministries of Health as the key partners will benefit from synergies with:

- All of the organisations involved in public health and animal programmes, notably national and international NGO's, donors, also specific technical programmes that target specific diseases such as malaria, HIV/AIDS etc, and those requiring particular support in planning and management from the logistics sector.
- All auxiliary services within the MoH such as pharmacy, maintenance technicians and hospital management.
- Medical teams (doctors and nurses) in order that non medical support services (management of financial and human resources) are delegated appropriately.

Emergency response mechanisms will be strengthened and streamlined for the benefit of the most needy population groups.

Such a training programme is to constitute a major contribution to efforts in reaching Millennium Development Goals, specifically relevant to health: namely the eradication of poverty and hunger, reduce child mortality, improve maternal health and combat HIV/AIDS, malaria and other diseases. It coincides with the objectives of GAVI and other actors who have operational strategies to increase the efficiency and development of public health and sanitary services for the majority of developing countries, particularly the lower income members.

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