GLOBAL HEALTH GOVERNANCE, HEALTHY SYSTEMS AND DEVELOPMENT COOPERATION

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Universities, as key institutions aiming at social change and development, serve not only as centres of production, reproduction and implementation of scientific knowledge. They are also integral part of the society in which they work and with which they entertain, more or less explicitly, a 'social contract' governing their mutual relations [1].

In recent years, universities have taken on an increasingly important role in international development cooperation leading to the proliferation of different social actors who offer international assistance ostensibly towards a fairer world through a process of human and sustainable development. In the health field we have gone from a situation where only a few specialized organizations such as the World Health Organization, selected international NGOs and few other UN agencies were devoted to the task, to one in which many other institutions, including private foundations, “philanthro-capitalists”, corporations as well as social groups have begun to implement or support development cooperation programs and projects in various health and health-related fields in different countries. This has given rise to a great diversity in cooperative as well as divisive efforts, working methods, and also among the specific objectives of the various projects and programs. In this context, it is not surprising that contradictions and problems have arisen in the way development cooperation, in general and particularly in health, is understood and applied into practice.

University’s international cooperation for health development consists of all the activities of the university community that are aimed at social transformation particularly in the most disadvantaged countries, transformation in which institutional and academic growth has an important role. It is implemented through partnerships and agreements (teaching / research / capacity building-institutional strengthening) with academic or other institutions from countries in the developing / low and middle income countries. Global Health is an emerging area for interdisciplinary studies, research and practice that considers the effects of globalization on health, and the achievement of equity in health for all people worldwide, emphasizing transnational health issues, determinants and solutions, and their interactions with national and local systems [2]. Clearly the field of global health extends beyond development cooperation, understood as policies and programmes aiming at improving life conditions in poor resource settings and countries through international and transnational (i.e. involving actors beyond nation-states) collaboration. Global health is, indeed, totally embedded in the wider horizon of cooperation among all countries to further peace, full respect of human rights and quality of life on a planetary scale.

In this sense, international cooperation plays a fundamental role in the worldwide promotion of the right to health and to ensure an adequate control of social determinants of health. International cooperation is undoubtedly an essential factor for both global governance “of” and “for” health agenda. Whereby “for” health refers to the need of including health priorities and concerns in negotiations and policy-making in arenas traditionally outside the health sector and the domain of health authorities, such as trade or education. In addition, governance complexity has grown as a consequence of the emerging in the last decade of new trans-national actors, which have substantially modified the power balances and global decision-making processes related to health.

The complex scenario described above requires the education of a new class of professionals - not only of those with a background in health sciences - capable of measuring the consequences on health of their decisions and activity, and equipped with the appropriated multidisciplinary knowledge, skills and motivation to act “for” health. Undoubtedly preparing this kind of future professionals is a fundamental role of the University, and should be an absolute priority for medical schools. Instead, especially the latter, at least in Italy, seem rigidly blocked on the prevalence of traditional biomedical curricula [3][4].

Development in health, understood as action to improve health condition world wide, is strictly connected to the described global and interdisciplinary dimensions, including when prioritizing populations in highest need. Instead, too often global health tends to be used exclusively to mean technical assistance in the provision of health services in poorer areas of the world. Without a clear understanding of the links between health and social determinants, and their transnational dimensions, and without a thorough appreciation of how health systems work, those health services might not only prove inadequate and unsustainable, but also contribute to further fragment and disrupt already weak national

health systems.

Thus, development cooperation in health cannot be separated from the wider global health framework. A dimension that has been introduced in the guidelines published in 2009 by the Italian Ministry of Foreign Affairs, Directorate general for Development Cooperation. The document, titled "Global Health: Guiding Principles of Italian Development Cooperation", aimed at "guiding health programmes of the Italian Development Cooperation, toward the strengthening of complementarity and consistency of the Italian cooperation system and to promote the alignment of official development aid policies to the policies of partners countries, as well as their harmonization with those of other donors and specifically of the European Union" [5].

In that document two leading questions are of specific relevance for the University: "Partnerships and frameworks to enhance cooperation", and "The link between knowledge and power within the processes of local and global development" [5]. Papers in this section touch upon the role and experience of universities in deepening the understanding and the practical application of those guiding principles (the fight against poverty and inequalities, universal and equitable access to health services, strengthening national health systems, participation of the communities, international partnership in scientific research and education, aid effectiveness).

Italian universities may pursue this objective through research activities, appropriate interdisciplinary and intercultural training paths, and providing adequate know-how and technology, including interacting with competent public institutions and civil society organizations in support of targeted initiatives of education, information, prevention and control.

The shortage of health workforce in resource-poor countries is one of the critical challenges to access to care. Cooperation between the Universities in the rich North and those in the poor South of the planet can play an important role in improving the local response to training needs. However a balanced relationship among partnering institutions, careful consideration of cultural, social and economic factors, and prioritization of local needs are paramount for a successful collaboration. Approaches such as distant learning, courses leading to double degrees or international accreditation, and proper accountability measures, may prove additional co-factors of success [6].

Framing health as a universal human right and recognizing equity as a fundamental principle in global health, and therefore in development cooperation, implies reaffirming the "health for all" goal and the Alma Ata Declaration (1978) emphasizing Primary Health Care as the most appropriate strategy to reach that goal with universal access to essential drugs as one of the core objectives. Today, the increasing diffusion of counterfeits further challenges the provision of effective care to populations in need. Again, a possible answer may come from increased local capability. Defining the quantitative dimension of the problem and training health professionals to enable local health institutions to locally produce essential drugs according to their needs is another example of the role that University may play in development cooperation [7].

More and more development cooperation involve multiple stakeholders in various forms of networks and partnerships, and harmonization and coordination become vital elements for effectiveness. As part of the autonomy constitutionally granted to Italian Regions, most of them have adopted regional laws providing both for financing and management of their development cooperation activities. The Tuscany Region was the first in establishing also a Global Health Centre aiming at facilitating the partnership and coordination among regional stakeholders involved in international health cooperation projects supported by the Tuscany Region. University is an important component of that partnership [8].

Universities can also be on the receiving side of their relation with international health development cooperation. Cooperating with countries in the developing world provides a fundamental contribution to the process of growth of the university wishing to gain a global perspective. The exposure of staff and students to international health cooperation activities enables them to appreciate the diversity, resisting discrimination, and contribute to the efforts aiming at improving society as a whole. Universities must also be able not only to adequately prepare young people seeking to enter the world of health development cooperation as competent and sensible professionals but as well to provide students and faculty with the adequate analytical framework and methodological tools. The aim should be to reaffirm health as a fundamental human right and a resource of the community, to address the power relations between the medical profession and the community as a determinant of health and to engage in working practices for addressing them. Adopting in the process a self-reflective approach, universities genuinely committed to advancing the right to health may invest in developing innovative methods and opening participatory, horizontal academic workspaces where research and teaching are viewed as tools for social change and health promotion. The main problems that are likely to be encountered in this process may be related to the traditional, conservative attitude of medical faculties confronted with the need for change, the difficulty of health professionals to address the issue of power relations and the trouble experienced by physicians in accepting multi-methodological approaches and working in multi-disciplinary teams [1].

The participation of universities in international health development cooperation is based on the vision of it as a process of progress and social, economic, political, cultural, and technological change which, emerging from the collective will, requires the organization and the participatory, democratic use of power by members of a group. Popular education in general, and in particular higher education, is an essential component of the process of expanding opportunities for freedom for people and societies. As a result, strengthening the university system and promoting access the higher education are essential objectives of universities in international development cooperation.

Similarly, a goal of health development co-operation for the University is to work together to try and resolve the difficulties and contradictions related to the fight against poverty and development processes, through the promotion of research in fields related to these goals, i.e. the social and political determinants of health such as equity, environmental sustainability, peace, and quality of life, within a conceptual framework of human rights and social justice.

To avoid focussing exclusively on knowledge and technology transfer or on philanthropic “doing good” rhetoric, international development cooperation for health should translate into a meaningful strategy whereby universities commit themselves to a bold process of "deconstruction" of the many clichés and stereotypes which make up the current, conventional "underdevelopment" and "development aid" discourse. Universities have a clear and, obviously, "universal" mandate to bring the world, in all its cultural and physical diversity, to their students and other constituents. Educational programmes and research should provide an introduction to the complex global context. These activities, together with the possibility of international experiences, help to prepare students for active participation in the economy and global society.

From such a perspective, the role of international health development cooperation for the university cannot be regarded simply as one of the functions within a generic process of international co-operation between the University of the North and South of the world or a sort of exotic appendix mostly intended as flagship projects meant to embellish academic institutions. Universities adopting a development cooperation approach in its fullest meaning, especially in the global health field, should instead aim at enriching humanly and academically the people who participate in this effort and the structures that compose it. Cooperation and selfless commitment to solidarity, human rights and social justice should be their powerful hallmarks.

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THE ROLE OF THE UNIVERSITY IN THE GLOBAL HEALTH STRATEGIES OF THE ITALIAN DEVELOPMENT COOPERATION

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ABSTRACT

How is globalization affecting the determinants of health, health care systems and the ethos and practice of medicine? What are the effects of global governance "of" and "for" health and how do new international actors and transnational development cooperation impact on the balance of power and global decision-making? In particular, what role should Italian universities play to have some relevance on the new global context? Answering these crucial questions means raising the issue of the social responsibility of the University as an institution, and not just of the School of Medicine. The process of internationalization of Italian academic institutions provides the chance to (re)-discover from a global perspective the ethical and social motivations that are at the foundation of health professionals' education. It is also an opportunity to emphasize the importance of "global citizenship", promoting equity and the right to health, the central themes of the new paradigm of Global Health. The document of the Directorate General for Development Cooperation (DGCS), "Global Health: Guiding Principles for the Italian Cooperation (2009)", although not free from internal institutional contradictions, provides important insights into the University's mission to combine production and reproduction of knowledge with the moral duty to strengthen the ownership and capacities of vulnerable populations in identifying their health needs and assessing the quality of services, according to an approach that encourages the participation of communities in the protection their own health. In this sense, it is essential to support the crucial process of transformation of practices and everyday interactions between individuals, inside and outside the University.

INTRODUCTION

The idea of globalization evokes cross-border flows of people, goods, ideas, values, knowledge, technology and money leading to a highly interconnected and interdependent world. Globalization is a multidimensional process, with multiple and diverse effects (economic, social, cultural, political, technological and environmental) on individual countries and population groups, demanding responses requiring the engagement of multiple sectors, including health.

The term "Global Health" is rightfully part of the contemporary scientific discourse, extending beyond that of International Health, that merely refers to health issues in bilateral or multilateral relations among countries, focuses on health issues of, and interventions in countries other than one's own, especially those of low-income and middle-income, and embraces a few disciplines but with no attention to multi-disciplinarity. [1]

Global Health emphasizes the new transnational dimension of the several geopolitical factors that affect the determinants of health, as well as the strategies needed to cope with the new, emerging challenges. [2] National borders, in fact, do not constitute a significant barrier to the spread of diseases and their determinants, and they no longer represent the only spatial and cultural boundary for the development of health policies, [3] nor these can alone take into account the complex interaction of social, economical and environmental determinants of health. To understand the determinants of health and develop adequate responses requires full awareness of the global forces that impact on health and its distribution within and between countries, of how societies respond to health needs and of how different cultures more generally perceive and define health and disease.

WHY GLOBAL HEALTH IN HIGHER EDUCATION?

Thus, higher education aiming at preparing human resources capable of adequately responding to today's and future health needs must take responsibility for the mandate to create professionals with the human quality and a broad range of professional competences (knowledge, expertise and attitude) required to face the challenges of globalization, its impact on human health and on global, national and local health systems. Due to the multicultural nature of modern societies, the increase of economic refugees and victims of violence, the growing healthcare demand created by the

expanding international tourism, and the health consequences of demographic, environmental, technological and socio-economic changes, among others, health professionals are more and more confronted with different cultures and patients coming from other parts of the world, are involved in various forms of multi-centric research, are employed in companies, intergovernmental or international non-governmental organizations, international development programs or are expected to give expert inputs into disputes about global development issues. Similarly, experts from other disciplines increasingly contribute to decision-making in forums outside the health sector, which nevertheless have considerable impact on health, such as economic, social and environmental national and international institutions, and transnational private, public and hybrid networks. All these professionals do have the option, together with health professionals, to engage themselves for health.

Besides the need to update content and teaching methods, further concern is gradually emerging about the danger that health professionals might lose sight of their primary objectives and fundamental values. [4] The financial, legal and political issues introduced by the neo-liberal, pro-market health sector reforms are, in fact, likely to divert medical education from its original mission. Over a decade ago the American Association of Medical Colleges took note of the vital need to acknowledge and nurture the social contract that exists between medical schools and the community they are expected to serve. Central part of this agreement is to train students to become socially responsible professionals, i.e. people who, aware of their responsibility towards human society, are prepared to willingly take part in activities that contribute to the welfare, health and prosperity of a community and its members. [5] The ethical commitment cannot be limited to one category of professionals, though. More and more, as we highlighted above, many professionals outside a strictly defined health-sector are increasingly responsible for health-related issues locally, nationally and globally. Recent studies and empirical investigations have shown a robust association between inequities and unsatisfactory health trends, and the process of globalization led by neoliberal economic policies, beyond the mere consequences of health sector reforms. [6] Such a global scenario requires that students be engaged in a wide range of disciplines that reflect the values and the social mission orienting their professional future. Thus, global health teaching should also entail an ethical commitment to educate future professionals to social justice and to their active commitment in correcting the global processes at the root of human suffering and health inequities. [7]

From the dread of the HIV/AIDS pandemic to the dispute on the access to essential medicines and to basic health services provoked by the World Trade Organization, [8] in order to create this type of professional the traditional curriculum oriented to our domestic health problems is obviously not enough. It is instead essential to consider how socio-economic, cultural and environmental factors transnationally affect people's health and facilitate our understanding of how the global burden of disease differs from one country to another and within the same country. Moreover, the study of health policies and health systems at the international level is essential to build the conceptual framework needed to address the multiple and complex interconnections of the determinants of health. All this is what gives significance to the term "Global Health".

GLOBAL HEALTH AND THE INTERNATIONALIZATION OF THE UNIVERSITY

There is widespread interest for the internationalization of our universities. What does this mean and how does it relate to the process of globalization and the changing context described above? [9] For some, [10] the concept of internationalization refers to the response needed to cope with the profound changes brought about by globalization. This requires a better understanding of the diversity of social, cultural, ideological and political issues affecting today's globalized world.

According to Knight [11] the internationalization of an academic institution is "the process of integrating an international, intercultural or global dimension into the purpose, functions [research, teaching and services] or delivery of higher education at the institutional and national levels." The international approach of a University includes both cross-border and campus-based initiatives. The first type, "internationalization abroad", relates to academic staff mobility through exchanges, field works, sabbaticals, recruitment of international students, joint degree programmes, and international development agreements. The second type, "internal internationalization", is the introduction of an international and intercultural dimension into the teaching and research process "at home". To do this, we need reforms geared towards a curriculum that prepares students to develop international awareness and intercultural skills through appropriate educational programmes, innovative methods of learning, extra-curricular activities, activation of relationships with local ethnic and cultural groups, including the inclusion of foreign students and teachers in the internal life of the host University.

The idea of internationalization of higher education can also be an expression of different worldviews. On the one hand, internationalization can be understood as the institutional process by which the University can compete on a global level in the training market. Another way to see internationalization is as an example of global cooperation and international and intercultural sharing in an ideal "global village". A third model aims at social transformation through a critical analysis that rejects the supremacy of the market and recognizes the reality of marginalized groups produced by the neo-liberal globalization. In this model of internationalization, research and training, guided by the principles of reciprocity, mutual exchange and global partnerships, lead to increase awareness of the inequalities between and within nations. [12] Regardless of individual preferences, the very existence of these different models is an expression of the fact that universities are values-based organizations and, as such, can facilitate a transformation of the social order. On

the other hand, the choice of the model has evidently great importance and raises the question of the social responsibility of the University.

UNIVERSITIES AND SOCIAL RESPONSIBILITY

In fact, in the recent years an increasing number of universities around the world, and in particular their Medical Schools, have been developing a critical reflection on their "raison d'être", the relevance of their programmes and their impact on health systems and population health needs. In other words, they are becoming aware of their responsibilities towards society. [13] The World Health Organization (WHO) defines Corporate Social Responsibility of the Schools of Medicine as "the obligation to direct their education, research and service activities toward addressing the priority health concerns of the community, region and / or nation that have the mandate to serve." [14]

Internationalizing health professionals' education means putting in place strategies and institutional actions aimed at creating graduates able to effectively perform their profession in a society constantly changing, equipped with the right expertise in a wide range of general areas, including "global citizenship". [15] The College of Medicine, University of Saskatchewan, Canada, interprets internationalization as "a reciprocal process, where communities and institutions at local and international level tend to share ideas and knowledge and to learn from experiences, cultures and the search for the other." [16] The final product of such an educational orientation is the development of a "global perspective". In this sense, investing on the internationalization of the University can be a useful mechanism to make social motivation and humanitarian purposes (re)-emerge after a long, dormant period and, perhaps, undermine the inertia and resistance to change typical of the academia.

Moreover, the concept of internationalization *of*, and *for* health professionals' education has no doubt a political significance. Teachers in the health field bear additional responsibilities to address the harmful health effects of the growing socio-economic inequalities and unequal distribution of determinants of health, the relentless movement of masses of migrants, the commodification of health by free-market ideology, the new configuration of global health governance whereby undemocratic supranational institutions and questionable philanthropic capitalists erode the leadership of intergovernmental organizations, such as the WHO, the only formally mandated and most qualified agency to protect the health of the planet. The impact that these changes have on human health and health inequalities is documented by an extensive and authoritative scientific literature [17][18] and calls into question the social role of the entire University.

GLOBAL HEALTH AND DEVELOPMENT COOPERATION

An important component of training in Global Health is related to the appraisal and critical analysis of issues related to organizations, ways and means of international health development cooperation with countries and people in the most disadvantaged socio-economic conditions. As social justice is the foundation of public health, [19] the main reason for the inclusion of this subject in the educational process of future health-related professionals is their moral obligation to deal with unmet needs and health inequities including the health gap between the poor and rich countries.

"A child born in a Glasgow, Scotland suburb can expect a life 28 years shorter than another living only 13 km away. A girl in Lesotho is likely to live 42 years less than another in Japan. In Sweden, the risk of a woman dying during pregnancy and childbirth is 1 in 17.400; in Afghanistan, the odds are 1 in 8. Biology does not explain any of this. Instead, the differences between - and within - countries result from the social environment where people are born, live, grow, work and age." [20] The first step towards a solution of these problems is an increased awareness that comes from adequate information and training. A further reason for exposure and involvement in these issues lies in the competence and sensitivity for which the student is enhanced to appreciate the diversity and combat prejudice, analyse the change and the forces that shape society, and the increased capacity to operate in a varied range of circumstances. [21]

Increasingly universities include in their programmes stages and experiences of variable length with partner institutions in disadvantaged countries and limited resources settings. Benefits that students can enjoy at individual level by interacting with situations of poverty, exclusion and social injustice cannot be underestimated. In Canada, young people who have taken courses in global health are reported as having learned to think in an innovative way and acquired a greater enthusiasm for medical studies. [22] Training and experience in the field of international health, if properly framed in a more comprehensive understanding of Global Health, also promote knowledge and behaviours in support of the values of diversity and social justice, the importance of a cross-sectoral and interdisciplinary approach to health, the inter-relationship between health and human rights and the impact of socioeconomic inequalities on individual health and population: quite a powerful set of tools *for* health care providers in a multicultural and socially stratified society as the one we are living in.

Encouraging people to "field experiences" leads to another important advantage: doctors, nurses, and other professionals and academic staff who have practiced in poor countries and disadvantaged circumstances, or have made first hand experience with similar themes, are much more inclined to work in primary care, general and preventive medicine, and health promotion. Having appreciated what it means to assist people in extreme need leads in general to

also continue this type of activity once back in the country of origin. [23] However, in extending overseas experience in "Northern" training programmes, it will be important that such experience is not gained at the expense of already overstretched training programmes in low-income countries' partner institutions. Such posts will need to be properly resourced and should ideally be part of broader capacity strengthening relationships between partner institutions including, where appropriate, the possibility of reciprocal experience for overseas trainees. [24]

In a global health education perspective, however, the overseas experience needs to be part of a wider analysis and understanding of the macro-political and economic environment, including the global aid architecture and power relations among international and transnational actors, together with their influence in determining the priorities of global initiatives. It has been argued, for example, that international health cooperation with poor countries may also be a factor in strengthening national security in the global North countries by limiting both the prospect of conflicts [25] and the increasing migratory movement. [26] Not to mention the positive, though perhaps deceptive, effect on the prestige and stature of more magnanimous international donors. However, such considerations suffer of a rather mono-cultural (western) outlook and do not take into consideration the considerable changes of global (and specifically health-related) governance and the increasing complexity of relations brought about by the astounding mushrooming of new private actors, global initiatives and public-private partnerships, the growing role of emerging countries, and new approaches to international cooperation. This calls for an extra responsibility of the University in the fulfilment of its double mandate of education and research.

In this regard, focusing on our own domestic context, what is the role of the University in the Global Health strategies of the Italian development cooperation?

THE ROLE OF THE UNIVERSITY IN THE GLOBAL HEALTH STRATEGIES OF THE ITALIAN DEVELOPMENT COOPERATION

In 2009 the twenty year-old Italian Development Cooperation for Health (DCH) guiding principles [27] were reviewed and reformulated through a participatory process involving experts from a range of public and private institutions, including from five Italian universities (Università Bocconi, Università di Bologna, Università di Firenze, Università "La Sapienza" di Roma, Università "L'Orientale" di Napoli). [28]

The 1989 principles reflected both the Alma-Ata Declaration and the National Health Service (Servizio Sanitario Nazionale - SSN) approach to providing health for all, including equitable distribution and access to health resources, emphasis on prevention, community participation, technological appropriateness, inter-sectorality, promotion of local self-sufficiency, and support to the development of local health systems. [27]

In line with these principles and its integrated approach to health and development, the new guidelines titled "Global Health: Guiding Principles for the Italian Cooperation" (hereafter "the Guidelines") insisted on a holistic approach to health as part of wider poverty reduction strategies, strengthening health systems, universal and equitable access, and aid effectiveness for global health, including the need to align global health initiatives with national systems. [28] Although not free from internal institutional contradictions, the 2009 Guidelines provide important insights into the University's mission to combine production and reproduction of knowledge with the moral duty to strengthen the ownership and capacities of vulnerable populations in identifying their health needs and assessing the quality of services, according to an approach that encourages the participation of communities in the protection their own health.

From the preface, the document frames DCH in the wider context of "health as universal human right" and "an essential condition for poverty reduction and socio-economic development". It stresses the complexity of the health sector, which requires interaction with other sectors of development and indicates the primary responsibility of health systems in granting the quality of population's health and its level of equity and protection, deriving from their function of social institutions in the context of "the contract between the State and the citizen". Indeed, the system approach continues to orient the discourse of the Italian Cooperation in Health (and in other sectors), while contradictions arise when the Italian contribution to DCH in the multilateral system is identified with participation in Global Health Initiatives[1] characterized by their vertical mono- or pauci-thematic approach, contributing to fragmentation and contrasting the internationally shared call to ownership, alignment, and harmonization of development aid.

Box 1 - Guiding principles of the Italian Development Cooperation in Global Health

- Reference framework.
- Fight against poverty and socio-economic inequalities: social determinants of health.
- Universal and equitable access to health services.
- National health systems; Community participation.
- Scientific research, knowledge networks and cultural promotion.
- Natural and human made disasters.
- Development aid effectiveness for global health.

[1] Global Poliomielitis Eradication Initiative - GPEI; the Global Fund to fight against HIV/Aids, Tuberculosis and Malaria - GFATM; Global Alliance for Vaccines and Immunizations - GAVI; International Financing Facility fro Immunizations - IFFIm; Advanced Market Commitment - AMC.

The Guidelines are organized around a general framework and seven themes (Box 1), including “Scientific research, knowledge networks and cultural promotion” of particular relevance to the University's role. The guiding principle of this theme is the promotion of international partnership for research and training “among peer institutions and actors, or carriers of different knowledge” where ‘different’ is to be understood as ‘unconventional’. To that purpose the identified lines of activity are: a) operational research programs that should involve local community and health personnel participation; b) the strengthening of the partner countries' scientific research capacity, including through increasing the expenditure in research related to health problems affecting the poor; c) the research of new drugs and vaccines, identifying the priorities based on health needs and granting access of developed products to partner countries' populations; d) the assessment of health technologies and on health systems capable to promote effective policies and practices. It is striking to note that no activity line is dedicated to higher education and training in health, despite training being mentioned in the guiding principle. In this regard, it might be important to explore whether this conspicuous omission does simply denote a material error or instead it reflects a conscious underestimation of a real need.

In addition, it is interesting to note that the Italian Development Cooperation Law (n.49/87) [29] does not foresee the possibility to finance research projects, but only projects aimed at “the transferral of appropriate technologies” to developing countries. This represents a substantial difference with other donors (such as UK, Sweden or Spain) that do allow their aid agencies to finance development-related research conducted by their own research institutions. In that sense, it could be argued that research mentioned in c) should not be financed through official development aid regulated by Law n.49/87. Indeed, Italian participation in innovative financial mechanisms such as the AMC (Advance Market Commitment), specifically aimed at financing research mostly led by the private industry in technologically and economically most advanced countries, would seem extending beyond the limits allowed by Law n.49/87.

However, the role of the University necessarily extends beyond the promotion and support of research in developing countries. As the primary source of education of human resources that will feed the development cooperation system, as well as the privileged place for research, the University may play a fundamental role in linking its educational and scientific activities to increase, on the one hand, the capacity of the Italian development cooperation system to respond to the needs of global health and accomplish the principles it adopted to respond to those needs. On the other hand, it may contribute in linking that effort to collaborative activities with peer institutions in partner countries aiming at developing local capacity.

The role that the Guidelines attribute to social determinants, health systems and equity reflect the characteristics of the Italian approach to health (as a fundamental Constitutional right embodied in its universalistic National Health Service, etc.) in the wider context of international agreements, conventions and other documents mentioned in the general framework of the guidelines. Thus, one would imagine that those same principles are already integrated in the teaching program of Italian medical schools. Unfortunately this is not the case. Besides a few general concepts presented during the course of Hygiene and Public Health, Italian medical and other health sciences students are rarely exposed to these principles and approach during their undergraduate studies, and, unless they chose to follow postgraduate courses in Public Health or related disciplines, they may enter the profession without or with minimal knowledge of the principles on which the whole system is based.

Moreover, principles such as those listed under the sections “Fight against poverty and socio-economic inequalities” or “Community participation” are even more distant from the still prevailing bio-medical approach of Italian medical schools, where interdisciplinary exposure is totally missing. Providing future health professionals with the competences such as those necessary to adopt “integrated approaches that may act on education, nutrition, housing and working conditions, and on the environment”, or to correctly act for “a more equitable distribution of power, money and resources” with an inter-sectoral vision, or to empower communities through their “involvement in the evaluation, management, and communication of environmental and working risks”, or to operate in different cultural contexts “valuing traditional practices and interpretations of health problems”, requires a deep rethinking of today's programmes and pedagogic approach of medical schools, and in general of a University system which largely lacks flexibility and dynamism.

It should be added that the Guidelines refer to the need to strengthen the complementarity and the consistency of the Italian Development Cooperation “system”, which however does not fit into the legal and organizational framework set by the law 49/87 more than 25 years ago. At that time, in fact, Italian policymakers did not foresee the increasingly diverse and rather fragmented initiatives that public institutions and private organizations would have introduced in the field of international cooperation, and whose reform is long overdue.

CONCLUSIONS

The acceleration of the globalization process and the dominance of the neoliberal model have deeply influenced population's health and the way national health systems interact in the wider global health system. Traditional actors and approaches to development cooperation are confronted with deep changes in the aid architecture and in the balance of power in global decision-making, as well as with substantial transformations in the way actors operate and interact at the national and local level. More and more health professionals need to develop new competences involving knowledge derived from non-medical disciplines, while professionals with different disciplinary background need to

complement their skills with knowledge and expertise enabling them to act *for* health.

In this context the University needs to reflect on, and eventually redefine its social responsibility, and with it its ethical framework, methodological approach and content of the educational project. In essence, in globalized times the basic profile of health and *for* health professionals operating in a national health system does not substantially differ from that of their peers engaging in the global arena or specifically in development cooperation settings.

The Global Health Guidelines that Italy has adopted, and that ought to inspire the entire national development cooperation system, show some internal contradictions but may offer an inspiring contribution to the redefinition of the curriculum of medical schools and other University departments whose graduates, whatever their discipline, will predictably play a role in influencing health determinants. Indeed, although individual experts from a number of universities contributed to the formulation of the Guidelines, the Italian University, and specifically the Medical Schools, do not respond to the needs of human resources that those guidelines envisage. Thus, a process should be promoted aiming not only at increasing the offer of optional courses in Global Health to students in all faculties, but also at mainstreaming Global Health issues in the educational experience of future health professionals.

NOMENCLATURE

DCH	Development Cooperation in Health

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GLOBAL HEALTH EDUCATION AND THE GROWING NEED FOR POLICY-MAKING AND MANAGEMENT TRAINING OF FUTURE HEALTH-RELEVANT PROFESSIONALS

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ABSTRACT

Global health and *for* health governance have been increasingly recognized as key elements of sustainable development. At the same time, in the last two decades there has been a dramatic increase in the number of public and private actors involved international development cooperation and of the overall complexity of the global health scenario. Traditional competences have become insufficient and there is a growing demand for professionals who combine a thorough understanding of health-related challenges with multidisciplinary training in social sciences, economics, and management. This led, in the last few years, to the mushrooming of courses dedicated to global health and contributing to obtaining an academic degree.

We review our recent attempt to innovate the educational offer in global health policy and management, as part of a wider initiative involving a consortium of academic institutions in Italy, and analyse the recent trend in global health education, focusing mainly on interdisciplinary approaches to global health education as those proposed in non-medical schools and to students with no background in health disciplines.

We conclude that while global health and development is certainly an emerging area in the higher education systems of many countries, the international offer of graduate programs is highly dominated by programs taught in medical or public health schools, failing to combine health sciences with economic, social, and management sciences. We argue that the multidisciplinary nature of global health education programs should be improved.

INTRODUCTION

Health has been increasingly recognized as a key element of sustainable economic development, global security, effective governance, and human rights promotion [1]. Since the late 1990s, the role of health in global development policies became more relevant, as shown by the fact that three out of the eight Millennium Development Goals (MDGs) set forth in the year 2000 by United Nations Millennium Declaration are related to health targets (MDG 4: Reduce child mortality, MDG 5: Improve maternal health, MDG 6: Combat HIV/AIDS, Malaria and other diseases). This shift in attention to health also resulted in an unprecedented growth at a global level of financial resources destined for the development of the health sector [2], although this trend is now slowing due to the prolonged economic crisis. The media are increasingly referencing the idea of global health (GH), multilateral and bilateral donors are put increasing emphasis on it, and global health-related activities from the global philanthropy sector are increasing. A growing number of global initiatives and actors increased the complexity of the GH governance and management structure, posing new challenges to international institutions with the mandate of international coordination, the most important of which being the World Health Organization (WHO).

Driven by influential academic research, there has been a qualitative shift in GH priorities toward a better understanding of (and support for) social determinants of health [3] and best practices in health systems management and policy implementation.

Besides the obvious relation of GH with public health and transnational charitable activities, GH has also been described as investment (to maximize economic development) and as a strategic foreign policy imperative for both political and economic reasons [4].

As a consequence of these trends there is a growing demand for professionals who combine a thorough understanding of health-related challenges with multidisciplinary analytical, policy-making, economic, and management skills, as well as the capacity to interact with diverse stakeholders at all levels.

The global job market is in fact offering unprecedented opportunities for graduates with these skills in both the private and the public sector, as well as in the emerging area of public-private endeavours. International institutions, development cooperation agencies, pharmaceutical, biotech, and medical devices companies, central and local governments, public, private, non-profit, and commercial providers, insurance companies are the privileged targets for

the competences related to GH. The need for research in GH is also growing and is increasingly using innovative approaches that link health to political economy, social and management sciences, and international law.

The subject attracts new generations of students and scholars and the offer of courses in this new area is booming. However, there is still wide discrepancy in the content among GH courses offered around the world and some times the denomination GH is arguably used to refurbish pre-existing courses in "international health", "tropical medicine", and others in a mere response to marketing needs [5] and cosmetic re-labeling of old patterns, objects, and interests without real social innovation [6].

On one side the question arises "what should be taught when we teach global health?" [7], on the other "where and to whom should global health courses be offered?".

Due to the complex characteristics of the GH arena and the multidisciplinary nature of the field, post-graduate employment and continued research in the field inevitably necessitate a more comprehensive, interdisciplinary skill set which covers scientific, political, social, and economic disciplines. It is only with this interdisciplinary mindset that it is possible to effectively perform analyses, engage in policy-making, and manage activities both among the various sectors as well as between highly intertwined, yet separate, actors including the public sector, the private sector, and civil society. Similarly, the need to include multiple consolidated disciplines (sociology, political sciences, economics, anthropology, and others) allows understanding GH as more than simply the global dimension of public health [8]. Nevertheless, the international offer of graduate programs is highly dominated by programs taught in medical or public health schools. These programs, which often fail to combine health sciences with economic, social, and management sciences, also tend highly target medical and health sciences students.

We define "Global health as an emerging area for interdisciplinary studies, research and practice that considers the effects of globalization on health – understood as a complete state of physical, mental and social well-being – and the achievement of equity in health for all people worldwide, emphasizing transnational health issues, determinants and solutions, and their interactions with national and local systems." Thus, in our vision "Global Health Education" should aim at providing skills beyond "health" studies and supplementary to those acquired through training in specific disciplines, and its outcome should produce professionals who, whatever their specific field of training may be (e.g. medicine, economics, sociology, natural sciences, engineering, etc.), understand how their professional work on local levels can feed into or be linked with global actions [9] in a truly "g-local" approach.

The inclusion of equity in the definition also has methodological implications. GH studies should engage students in a thorough reflection on the values and social mission of future health and *for* health professionals. In other words, GH teaching should also imply an ethical commitment to educate future professionals in social justice and their non-neutral role in correcting global processes at the root of human suffering and inequities in health [7].

Between 2009 and 2012, the Global Health and Development Group of CERGAS at Università Bocconi coordinated a consortium of academic institutions including Università degli Studi del Piemonte Orientale and Università degli Studi di Milano-Bicocca, which spearheaded a project aimed at introducing or consolidating courses in GH in non-medical departments of the three institutions. The project was supported by a grant from the Fondazione Cariplo. The project aimed at addressing the lack of competences and skills in GH-related topics through increasing the existing offer with the creation of multidisciplinary courses and specific tracks on GH open to Italian and international students of different universities; developing research capacity and skills at postgraduate and PhD level and promoting research partnerships and international networking through the organization of conferences and workshops.

To contextualize the above mentioned experience, in the following section we analyze the recent international trend in GH education, focusing mainly on interdisciplinary approaches to GH education as those proposed in non-medical schools and to students with no background in health disciplines. To that purpose we make specific reference to recent trends of GH teaching activities in Italy, France, the UK, in the USA, and in the Latin American subcontinent. We then present our firsthand experience in introducing and consolidating GH education in non-medical schools in Italy, with specific reference to Università Bocconi and its school of management.

In the conclusive section we argue that the multidisciplinary nature of GH education programs should be improved.

TRENDS IN GLOBAL HEALTH EDUCATION

In Europe as in the Americas and in almost every continent there has been an astounding increase of courses related to, or including "global health" in their title. In a recent review Harmer [10] has shown that in the **UK** there are far fewer opportunities for undergraduate students than postgraduates to study either international or global health. Furthermore, amongst undergraduate students, medical students have more opportunity than non-medical students, also because of the availability of intercalated one-year degrees. While GH has been widely confined to medical schools there are some signs that "non-health" departments are beginning to offer GH courses – Edinburgh and Glasgow's Schools of Social and Political Science, for example – suggesting a slow recognition that educating about GH is not just the responsibility of health departments. In addition, UK based distance learning opportunities are making a GH education truly global, in terms of geographical location at least. Nevertheless, it has been observed that: "There continues to be confusion about exactly what GH teaching opportunities are available at universities in the UK" [11] and "a public database of global health teaching programs" has been recommended "to signpost prospective students" [11].

Curiously, as Gautier [12] highlights, in **France** and Francophone Universities (Universités de la Francophonie), the only courses mentioning global health in the title are courses offered to Masters students at Sciences Po (France) and open seminars at the Collège de France, which are both taught in institutes not primarily related with health and medicine. They also appear to be the only two definitively looking at GH in a more comprehensive way. Although not tailored to any specific background, all the other several courses addressing global or international health as the core curriculum identified in France at both graduate and postgraduate level, seem to have in common the orientation to health in developing or resource-scarce countries.

In the **United States of America** where a surprising increase in number and diversity of GH course offerings over the past five to ten years has also been observed, the idea and definition of GH is still in its early stages and has yet to fully form its identity as a subject matter. However, in her extensive review about GHE in the USA, Procacci [13] notes that while the number of graduate courses offered within US-based institutions and offered abroad is quite comparable, when comparing the number and type of undergraduate course offerings, the United States is significantly ahead of its European counterparts, indicating that the USA is making a significant investment in a younger crop of graduates in order to instil the importance of GH. The study also highlighted that there is still a heavy presence of public health and medical schools in the teaching of GH, particularly at the graduate level which gives a weighty slant toward the medical, public health, and scientific aspects of GH. Nevertheless, this perspective does seem to be changing, even within SPHs, and it will be interesting to observe the continued transformation of GH degrees in the United States during the next decade.

Based on the findings of a recent research at the end of 2012 in **Latinamerica** no more than 10 Latinamerican institutions were reporting activities broadly defined as GHE [14]. There programs appear to have a number of unique features that distinguish them from the GHE programs in English-speaking North America and other countries in Europe. First, in Latin America the subject matter of the courses tends to focus on the impact of the globalization phenomena on population health and health systems and policies in the individual country where the course is being offered, as well as in the Latin American region as a whole. For the most part, the courses aim at instilling critical thinking and analysis of the global institutional and power structures dominant in contemporary society. This type of analysis naturally encompasses a multidisciplinary approach requiring the participation of specialists from a variety of disciplines such as economics, political science, anthropology, diplomacy and political science, etc. In addition to the critical discourse prominent in Latin American GHE programs, courses expect students to propose actions or projects to counteract the negative effects of globalization in their countries or communities. It appears that, being mainly low- and middle-income societies with high levels of social inequities, Latin American GHE focuses on the analysis of economic globalization on the generation and preservation of health inequities, as well as the design and implementation of measures that may contribute to resolving this situation. Also in Latinamerica GH teaching remains confined to health institutions, however most programs have a clear public health orientation with little or no involvement from the biomedical and clinical disciplines. As in Europe, the majority of the courses are geared to graduate level students and/or to professionals seeking continuing education credits. As yet, there are fewer programs for undergraduate students at Latin American universities. Thus, introducing GHE in undergraduate health careers curricula is an important pending task also for the Latin American region. Finally, most GHE courses in Latin America use, at least partially, web-based distance teaching methods. Use of synchronous and asynchronous learning technology platforms are basic tools in teaching GH in the region [14].

Global health has been taught in **Italy** for over a decade and, interestingly enough, it was first introduced in non-health faculties. Still, today, the only compulsory GH course is the one introduced in 2001 as part of the program of a Masters of Science of the faculty of Sociology of the University of Milan-Bicocca [15][16]. Nevertheless, thanks in particular to the successful partnership among several institutions, NGOs, and medical students, organizations that gave rise to the Italian Network of Global Health Teaching (RIISG), elective courses in GH have been introduced in several medical and health sciences schools and are increasing in number and quality [17]. Unfortunately, the rigidity and segmentation of the Italian academic system on one side does not allow the introduction of new compulsory courses within medical schools, on the other it makes almost impossible the exposure of medical students to other disciplines in the course of their studies. Despite being constantly highlighted as a fundamental aspect in GH education, in Italy and elsewhere, the importance of GH for future professionals in non-health sectors is still widely underestimated and the extension of GH education in those domains, and a truly trans-disciplinary approach still represents the biggest challenge.

GLOBAL HEALTH EDUCATION IN A NON-MEDICAL SCHOOLS IN ITALY: THE CASE OF THE UNIVERSITÀ BOCCONI AND ITS SCHOOL OF MANAGEMENT

Global health and development at the undergraduate level

As described above, in Italy, GH education has been limited to courses and programs in medical schools and to a few experiences at the graduate or postgraduate level in non-medical faculties. Until Università Bocconi offered this course, no Italian University ever offered a course in GH at the undergraduate level outside a medical schools.

As part of the Global Health and Development Teaching Project, supported by Fondazione Cariplo, in the academic

year 2010/2011 the undergraduate school of Università Bocconi introduced, for the first time, an elective course titled "Global Health and Development, Policy-Making and Management". The 48-hour course (6 credits in the European Credit Transfer and Accumulation System; ECTS) was offered by the Department of Policy Analysis and Public Management to two student types: students in their third year of the undergraduate degrees offered at Università Bocconi[1] and undergraduate and postgraduate students visiting Università Bocconi from other foreign universities as part of international exchange programs.

Course objectives, structure, and approach

The course was designed to provide a comprehensive introduction to the fundamentals of GH and development, with a special emphasis on the linkages between global strategies and national health policies and systems. The specific objectives of the course were to allow students:

- to become familiar with a multidisciplinary approach to key issues in GH;
- to develop a systematic and critical view on GH in the wider context of global development;
- to examine policies, strategies, and managerial approaches of global actors;
- to identify the key issues in health policy formulation and implementation in developing countries; and
- to be able to adopt a systematic view on the main challenges related to health systems, policies, and management in developing countries.

The course was structured in two conceptual blocks. The first block introduced students to global health-related issues, analyzing the relevant connections between the process of globalization, development and health. It then analyzed GH governance and its impact on health systems and access to health services in the wider context of development policies and assistance. The second block, after an introduction to health systems and policies in developing countries, focused on:

- the relationship between development assistance and health systems development;
- health financing and incentive mechanisms to improve the quality of and access to healthcare; and
- delivering health services and the role of healthcare management in developing countries.

The course was entirely thought by faculty members and international experts. Attending students were assessed via a midterm, a written exercise (30%), a group project (20%), and an individual research work (50%). Non-attending students were assessed only through a written exam (100%).

Students and expectations

The course attracted the interest of more students than expected with 59 students enrolled in the first year and 42 in the second. Although unconventional for students of Università Bocconi, with those numbers of enrolment the course appeared rather attractive to students of the third year, particularly when compared with enrolments in other electives.

In both years around 64.5% of enrolled students were Italians, which is slightly higher than the overall average for optional courses taught in English at Università Bocconi. In the first year, 68.7% of students enrolled came from two Bachelors courses, CLEAM and CLES, while 31.3% came from the international exchange program. In the second year, the proportion of enrolled students belonging to the exchange program decreased to 26.3%, as did the percentage of students from CLES (15.8%), while the percentage of students registered from CLEAM increased to 57.9%. This change in the distribution of students across bachelor degrees is not easy to interpret. A possible explanation may be that while there is a latent interest for GH and development among students studying Economics and Social Sciences, the course was more suitable for students studying Business Administration and Management. In fact, at the beginning of the first year, students were asked about their expectations regarding the new course, and around 26% of students mentioned that they expected to learn about the link between health and economics. This topic was covered by the course, but only to a limited extent. Among other aspects students seemed to be more frequently interested in learning about health systems, problems of both developed and developing countries, and inequalities in health.

Course evaluation and perspective

The experience gained in the two academic years in which the course was delivered, offers some interesting lessons for the future development of courses in GH and development in non-medical schools. Students highly appreciated the unconventional topics (for economics and management students) examined during the course. In both years, students showed strong interest for the new topics and a surprising curiosity for issues beyond the traditional boundaries of

[1] Bachelors of Business Administration and Management (CLEAM); Bachelors of Economics and Finance (CLEF); Bachelors of Economics and Social Sciences (CLES); Bachelors of International Economics and Management (BIEM); Bachelors of Economics and Management in Arts, Culture and Communication (CLEACC).

economics and management courses thought at Università Bocconi. The interest for the topics taught in the course was also confirmed by the choice of 16 students (15.8%) to develop their final thesis on GH and development-related topics. This is a remarkable outcome as the final thesis of undergraduate students is rather important in directing future academic or professional careers.

Nevertheless, students' evaluations of the course, particularly those students participating in the inaugural year of the course, indicated a number of areas in which improvements could be made, mainly related to general aspects regarding the content of the course and the teaching approach. Many students felt that to take full advantage of the course, they would have needed more previous knowledge; a more structured teaching material would have helped them to better follow the lectures; and the exam procedure could have been better clarified in advance. These observations were all taken into account in planning the course in the second year. In particular, a full set of lecture notes, complete with copies of all the proposed reading, was prepared and distributed to students in advance. A better understanding of students needs and expectations also helped the instructors better sculpt the course, and the second year students' evaluation yielded better scores in all domains compared to the previous year.

Implementing a global health specialization in the Masters of International Healthcare Management, Economics, and Policies (MIHMEP)

Since 1999, SDA Bocconi, the Management School of Università Bocconi, has offered Masters International Health-care Management, Economics and Policies (MIHMEP) providing an interdisciplinary and international education program specifically focused on healthcare management and policy. This was possibly the first program to be launched in Europe offering such a comprehensive approach to health, beyond traditional "business administration" on one side and "public health" approaches on the other. From the beginning, the course was based on an itinerary comprising 9 months of classroom activities and a three-month field project. Thus participants develop both theoretical and practical skills in management, economic analysis, policy analysis and formulation, and epidemiology.

Over its first ten years of life, MIHMEP's electives expanded from 5 to 14, encompassing new themes and partnering with additional professionals and masters programs. In the academic year 2002-2003, the GH focus was introduced, with two, 24-hour elective courses: "Global Strategies for Health" and "Policy and Management in Developing Countries", both of which are still taught [18]. Since its introduction in 2002-2003 students always very positively evaluated the elective course in "Global Strategies for Health", giving constantly scores between 9/10 and 10/10 in response to questions such as "interest of topics" and "professional utility", and suggesting in their qualitative evaluation, to make the course a compulsory one and expanding it to cover more topics related to global health. In addition to content, "interaction", "firsthand examples", and "emphasis on improving critical skills" were other convincing observations that pushed the direction of MIHMEP to further expand the course into a specialization.

In the academic year 2010-2011, the 12th edition of MIHMEP, the structure of the masters course was reorganized and new emphasis was put on the global dimension. While maintaining its original acronym, the claim of the course became "Find the right way to global health management". Accordingly, a Global Health and Development (GH&D) specialization track was introduced together with the Healthcare Management (HCM) and Pharmaceuticals and Medical Technology (PMT) specializations. Students are expected to choose one among the three. Each specialization has a total number of 120 hours of specialization courses and seminars to be taken by every MIHMEP student, mainly during the third term. After the completion of MIHMEP, students are awarded the MIHMEP Diploma and a separate certificate reporting the specialization undertaken.

The structure of the GH&D Specialization

In the first term, all MIHMEP students follow basic courses in epidemiology, healthcare systems and policy, health economics, foundations of management, and quantitative methods. In the second term, three additional compulsory courses are taught: "Economic Evaluation of Healthcare Programs", "Issues in Public Health", and "Financial Accounting". The third term is dedicated to the specialization. To increase multidisciplinary interchange, the courses of the GH&D specialization are also open to students from the Masters in Public Management (MPM), also taught at SDA Bocconi.

Consistent with the GH definition adopted by the Global Health and Development Group at CERGAS-Bocconi, the GH&D specialization aims at analyzing GH issues as they emerge from the tighter connections between globalization, development, and health. Through examining structures, policies, strategies and managerial approaches of both public and private (profit and non-profit) global actors, the GH&D specialization prepares students to become active actors in the achievement of equity in health worldwide, emphasizing transnational health issues, determinants and solutions, and their interactions with national and local systems. The specialization provides students with an overview of challenges in the changing global scene in health-related policy-making and management at global level. The specialization also allows students to understand key issues of healthcare systems, policies, and management in developing countries. Additionally, students obtain training in program/project management in an international context and are provided with policy evaluation skills.

Students that chose the GH&D specialization are supported in the development of policy-making and management skills which are interdisciplinary, intercultural, multi-level (global, national, local), dynamic (managing change) and

analytical; they are also given the capacity to manage relations with different sectors and actors in society (public, private, civil society) in different socioeconomic and cultural contexts and manage interactions at all levels.

The GH&D specialization requires a total of five mandatory courses: “Global Health Strategies”, “Health Management and Policies in Developing Countries”, “Program Design, Management and Evaluation”, “Evidence-based Policy Evaluation”, and “Managing Challenges in Global Health”. In addition to the chosen specialization, to receive the MIHMEP Diploma students have to choose two subsequent courses (minimum 48 hours of coursework) from the other MIHMEP specializations. The choice of these additional courses can be based on the individual's interests and future career expectations, giving an added value to the topics addressed in the student’s specialization.

The “Global Strategies for Health” course is introductory to the GH&D specialization. It first aims at fostering understanding and critical approaches to concepts such as globalization, development, and health, and the linkages between issues and processes. Students are introduced to the GH system, its architecture, and the factors that determine its governance. The structure, policies, and strategies of both public and private (profit and non-profit) global actors are studied, as well as the overall influence of those actors in determining changes on domestic health systems and access to health services. Finally, the global mechanisms of development assistance in health and health financing are presented.

The course, “Program Design, Management, and Evaluation” introduces students to project cycle management, enabling them to prepare logical frameworks, to identify and formulate projects through a participatory approach, to define project documents and to assess their quality. The course, shared between MIHMEP’s GH&D specialization and the SDA Bocconi Masters in Public Management (MPM) concentration in Management of International Organizations and NGOs, has an intersectorial approach to development cooperation and proposes a critical analysis of development cooperation instruments.

In the course “Evidence-based Policy Evaluation” students are invited to apply policy evaluation tools in a number of cases, both in high and middle to low-income countries.

The course is divided into two parts: one methodological and one based on case studies. The first explores the logics of policy evaluation and a number of quantitative and qualitative methods (such as randomization, non-experimental data treatment/control, matching, regression discontinuity design, and instrumental variables). Practical case studies, however, represent the main part of the course.

In the course, “Health Management and Policies in Developing Countries”, students are invited to look more in detail to the described interactions in the context and from the perspective of low-income countries. Here, case studies are used and a more practical approach is adopted.

Finally, in a cycle of seminars on “Managing Challenges in Global Health”, students have the opportunity to debate with senior international professionals and discuss the on-the-job experience in managing the challenges posed by a wide range of specific GH issues and practices such as migration, mental health, ethics, pandemics, global food system and obesity, global communication, disasters and emergencies, and demographic changes.

As an integrating and practical activity of the GH&D specialization, an innovative Study Tour at the principal organizations of GH headquartered in Geneva, Switzerland, was undertaken.

Who chooses to specialize in global health?

Based on MIHMEP students’ specialization choices, interest in GH and development was comparable to that in the other two specializations, notwithstanding the perceived smaller chances of employment and career perspectives after completing the masters, especially if compared with specialization in pharmaceutical and medical technologies. 13 students out of 38 (34%) chose the specialization in the academic year 2010-2011 (MIHMEP 12), and 11 students out of 33 (33%) in the academic year 2011-2012 (MIHMEP 13).

Although two years of observation do not offer an adequate sample for significant conclusions, it appears that students with a background in health sciences (medicine, nursing, etc.), law, and humanities tend to choose the GH&D specialization.

In terms of geographical origin and diversity, 46% of the students choosing GH&D specialization, came from non-European Union (EU), low-income countries.5 This does not differ substantially from the percentage (42%) of students from non-EU, low-income countries comprising the overall MIHMEP student body during the two observed years. In other words, interest for GH&D seems not to be significantly influenced by the economic development of the country of origin. However, it must be noted that the number of students from low-income countries choosing GH&D may be biased by the fact that this choice was favoured through fee-waiver grants provided by the Cariplo Foundation to students from those countries. Over the period 2009-2012 (i.e. MIHMEP 11, 12 and 13) the Foundation provided 7 full fee-waiver and 8 half fee-waiver grants.

Responsiveness to student expectations

As is the case for all MIHMEP courses, courses within the GH&D specialization were individually evaluated by students who were asked to give scores (1-10) on aspects such as: course contents (balance between theory and practical examples, interest of topics covered, professional utility, degree of in-depth study), general aspects (quality of teaching, appropriate use of different teaching methods, quality of course material, balance of workload, evaluation

method/exam), course organization, and faculty. Comments were also allowed both on the overall quality of the course and on individual professors.

While most of the parameters are very specific to the course organization and how it is taught, observations regarding interest in the topics covered and professional utility may help to evaluate the perceived relevance of the proposed topics in relation to personal interests and future career pathways.

In 2011, the opinions expressed by students regarding the "Global Strategies for Health" course were very much in line with previous years and scoring over 9/10 for both interest and professional utility. Instead, in the following year (2012) both these aspects were scored slightly below 7/10, for the first time in its ten years of existence. Without having the possibility to compare results on a similar time scale, but only with the previous year, a similar drawback was recorded also for all other courses in the specialization, with the only exception being in "Evidence-based Policy Evaluation". The latter received a score slightly higher to that - already very positive - recorded in 2011 when it was introduced. It must be noted that there were no substantial changes from one year to the other, thus student's less favourable judgment of four out of five courses may be at least partially attributed to the composition of the class. However, the very practical and interactive nature of the "Evidence-based Policy Evaluation" course may also indicate that learning and applying tools to case studies is seen as the most useful approach in view of future professional challenges in the international arena.

Internships and job placement

The students who choose the GH&D specialization are expected to develop their careers in international institutions and NGOs, global public-private partnerships, bilateral development cooperation agencies, national health authorities in low-income countries, the transnational corporate sector, or as international consultants.

Regarding internships both for MIHMEP 12 and 13, GH&D specialization student internships were mostly spent at international institutions and NGOs (7 for MIHMEP 12; 3 for MIHMEP 13); the others were distributed among public healthcare entities (1 and 2, for respective years), consulting firms (1 and 2, respectively), private industry (2 and 2, respectively), and research centers (1 and 2, respectively). In 2010-11 one student was intern assigned to a bilateral development agency.

An analysis of available information (personal information and/or research on LinkedIn) on post-graduation, job placement status of all MIHMEP alumni, roughly one third of the alumni are placed in the Pharmaceutical and Medical Device Industry category, one third in healthcare and public health services (public and private), and another third widely distributed among a variety of sectors (half of which are in academia and research.

For MIHMEP 12 (2010-2011) separate data are available for the 13 students who chose the GH&D specialization: 6 (46%) are currently employed in universities and research centers, 6 (46%) are equally distributed among public healthcare, international organizations and consulting firms, and one student is currently employed by a bilateral development cooperation agency. Again, numbers are too limited to drive firm conclusions, but it seems that an association exists between the GH&D specialization and employment in research.

The Professional Study Tour

The "Study Tour" is an experienced-based curricular innovation [19] only recently introduced in GH courses with the aim of addressing this theory-practice gap. By giving students the opportunity to observe theory being applied in professional practice, study tours may provide students with an experience-based component often lacking in the classroom setting [20]. It has also been argued that a short-term study tour abroad could efficiently increase students' global awareness and lay the foundation for the development of a sophisticated global mindset in future managers [21].

Despite its popularity in business schools and traditional business programs, the Study Tour does not appear to be widely used in "Global Health Masters" programs at present. The majority of short-term study tours associated with GH programs are largely based on engaging students in a 1-2 weeks module in fieldwork in a low- or middle-income country. As shown in a recent extensive research on GH programmes only the Management Center in Innsbruck and the University of Leeds offered similar study tour programs to Geneva associated with their Masters programs, while the University of Wisconsin (USA) offered a five-day study tour to the United Nations (UN) in New York associated with their "Certificate in Global Health", an undergraduate program [22].

The study tour to Geneva, was introduced as part of MIHMEP GH&D in 2011 as a means to expose students to real-life management and policy debates and the professionals in the GH domain. It lasted 10 days in 2011 and 7 days in 2012, during which the students engaged in a series of meetings with those currently working in the GH arena. The large historic actors as well as the small, emergent players were visited, including multiple departments and hosted partnerships in the WHO, UNICEF, the GAVI Alliance, the Global Fund, the International Labour Organization (ILO), the International Organization of Migration (IOM), UNAIDS, the International Committee of the Red Cross (ICRC) and the International Federation of the Red Cross and Red Crescent Societies (IFRC), NGOs, the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) and other expressions of the corporate sector, the WTO, NGOs, the Missions to the UN and Bilateral Development Cooperation agencies.

Students were divided into groups of 4-5 people, each group meeting a different organization each day, with a full participants meeting in the afternoon to discuss the morning meetings. While each group did not visit the same

organizations, the goal was that each group had the possibility to meet with each type of GH organization. The afternoon meeting then provided the opportunity for each group to present a brief synthesis of what was observed during the visit and an opportunity for comparison. When possible, evening dinners were also included in the program in an effort to maximize networking opportunities for the students outside of the workplace environments.

In participant students' view most successful and effective meetings included those offering a honest discussion of the organization management structure, panel discussions with more than one presenter instead of a single individual giving a brief overview of the work. Opportunities to ask more in-depth questions about the actual inner workings of the organization, were highly appreciated as well as presentations which offered practical advice on how to enter the field and career guidance, job connections, and internship opportunities. This “daily wrap-up” gave the students an opportunity for further, more in-depth communication among themselves regarding the organizations visited and the functioning of the management structures observed [22].

From education to research in global health

Understanding mechanisms and processes influencing GH governance are fundamental fields of economical and managerial research that need specific training programs. Thus the fourth pillar of the Global Health and Development Program was aimed at building capacity to undertake research in GH policy-making and management among graduate students and junior researchers. The “education to research” program offered young researchers and students the possibility to work with senior researchers in GH and development.

Final theses in GH and development were promoted among undergraduate and graduate students with a significant number of them choosing to elaborate their final thesis in this field and in a number of cases, students linked the thesis work and data collection with an internship in organizations in developing countries.

With the aim of promoting capacity building in GH research the support to a specific PhD project was included in the GH education initiative developed at Università Bocconi, with the support of the Cariplo Foundation. The PhD project was devoted to filling the knowledge gap existing on funding priorities of global philanthropy, an issue relevant not only for GH policy-making, but for foundations themselves, which are under constantly increasing pressure to be both effective and legitimate actors in GH governance.

CONCLUSIONS, LESSONS LEARNED AND PERSPECTIVES

The introduction of GH electives at Università Bocconi undergarduate school, a pioneering experience in the international scenario of economic studies, elicited a good response among students. Proposing GH electives at MIHMEP represented a relatively early attempt, as compared with its international competitors, to introduce future executives to the new emerging health challenges of a globalizing world, nevertheless it was the start of a specific specialization track that allowed MIHMEP to introduce itself as a pathfinder to “global health management”. Combining “management, economics and policies” approach to health still constitutes MIHMEP's comparative advantage with respect to its international competitors, especially when compared with those that restrict the idea of GH to traditional public health or even biomedical approaches. Nevertheless, we believe that to better respond to today’s health and healthcare challenges, with national policies being heavily influenced by transnational social determinants, the offer of GH courses should be wider both at undergraduate and postgraduate level. The main limitation of elective courses in GH is its limited cultural impact, as only motivated students will expose themselves to the subject, thus the GH perspective should be mainstreamed throughout master courses, such as MIHMEP, that aim at providing future professionals in the GH arena with the information and intellectual tools for a critical contextualization of their action. The right balances between different theoretical and practical approaches need to be constantly sought. Indeed, experience shows that especially executive students tend to value more teaching based on case studies and the application of practical tools. Among these the Professional Study Tour was an effective tool for developing contacts, expanding classroom experience and creating the linkages between the theoretical and the practical aspects of GH.

With the acceleration of the globalization process, the interdependency among national health systems and the interconnectedness between health and the multifaceted aspects of development have dramatically increased. New challenges call for fundamental changes in higher education systems that must be understood within the larger context of the internationalization of higher education. Academic institutions must take into consideration the increasing mobility in the globalised world, and rethink the modalities of their programs in order to consider students that may be working anywhere in the world, and possibly in more than one country, frequently shifting between different socio-cultural and economic settings.

Health and the health sector are peculiar in many respects; from the economics of ill health and health systems, to services’ management and policy-making, these fields require specific competences. This explains the poor performance of professionals with a “generalist” background in dealing with health-related issues (whether within or outside the “health sector”); this problem ranges from economists working in Ministries of Finance to academics, to managers of healthcare organizations and GH initiatives or foundations to local, national, and global politicians. Higher education programs should, therefore, reflect these peculiarities, and try to capture early in their studies the interest of future professionals that may not work for their entire career in direct contact with health services.

Despite the overall growth, the international offer of undergraduate and graduate programs in GH is highly dominated by programs taught in medical or public health schools. These programs, often fail to combine health sciences with economic, social, and management sciences, and also tend to be highly targeted to medical and health sciences students with components related to global social, economic, political, and environmental determinants, global governance for health, and health policy and systems remaining still rather marginal. Global health education should, by definition, develop interdisciplinary competences and skills to operate in the health sector and health-related socioeconomic areas. Global health programs should provide students with advanced theoretical and practical knowledge in public health, economic development, management, international law, and other disciplines relevant to policies for health, as well as with quantitative and qualitative tools necessary to generate, analyze, and interpret information emerging from the rapidly changing GH and development fields. In addition, graduates should be challenged with main issues relevant to the development and implementation of health policies in countries at different developmental stages. Thus, overall, the multidisciplinary nature of GH education programs should be improved.

Almost by definition, the nature of GH requires combining teaching to research and practice in a continuum between innovation, validation, and application; instead probably due to the still rather archaic and rigid structure of academia in many countries GH is hardly included into the mainstream academic field.

Finally, if the idea is accepted that the concept of GH encompasses the overall goal of equity, GH education cannot exist independently from a wider ethical framework, this must be reflected in how GH is taught. Beyond knowledge transfer and the acquisition of technical skills ("how to do"), the GH learning process needs to include the "how to be" in a globalized world with health and equity as common goods and fundamental human rights.

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NOMENCLATURE

CERGAS	Center for Research on Health and Social Care Management of the Università Bocconi
GH	Global Health
GH&D	Global Health and Development (GH&D) specialization track
MIHMEP	Masters International Health-care Management, Economics and Policies

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THE CHALLENGE OF TRAINING HEALTH PERSONNEL IN RESOURCE-LIMITED SETTINGS

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ABSTRACT

The shortage of health care personnel in resource-poor countries is critical, leaving many areas of the developing world, mainly rural, without access to care. Limited quantitative and qualitative capability of local academic institutions to train health care professionals, migration of physicians, nurses and faculty staff and lack of motivation to work in the most poor and rural areas are among the key causing factors. Possible proposed solutions are increasing training capability, adaptation of curricula with exposure of medical trainees to community needs, implementing task shifting, training mid-level personnel, increasing social accountability and promoting links among the different interested social sectors, namely health and education sectors. Academic institutions from western countries may facilitate these actions, provided that (i) a balance relationship is established with southern institutions, (ii) cultural, social and economic factor and are carefully considered and (iii) local needs are prioritized. Apart from traditional partnering, also including long distance learning, innovative ways to assist in establishing research careers and in establishing quality control procedures and accreditation are possible ways of north-south academic collaboration.

BACKGROUND

The shortage of health care personnel in resource-limited countries is limiting the right to care of billions of people around the world. This is particularly true for the African continent, where the global burden of diseases is estimated to be as high as 27% of the world's total despite the fact that only 12% of the world population live in Africa. To face this critical situation, Africa only have 3,5% of the total healthcare workforce and 1.7% of the physicians in the world [1].

This shortage affects all health professionals, from physicians to nurses, from pharmacists to any other qualified health profession [2]. The gap with western countries is enormous. As an example, the number of physicians in the USA is 270 per 100.000 population, while the corresponding number is 2.3 in Tanzania and 1.1 in Malawi [3]. This shortage is critical, as recognized by the World Health Organization that has dedicated to this topic the WHO Report in 2006 requesting for urgent interventions. The shortage is even more critical if one considers that over 75% of medical doctors in Sub-Saharan Africa live and work in the urban setting, leaving the rural areas nearly devoid of care providers [4].

THE PROBLEMS AND THE NEEDS

The reasons for this shortage of health care professionals where they are more needed are various.

Firstly, the training capability of health professionals in resource-poor countries is quantitatively limited. According to the African Medical School Study, around 6.000 physicians graduate every year in Sub-Saharan Africa, a lower number than the corresponding figure for Italy alone [5]. This limited capability is due to scarce funding and poor infrastructure, as well as to the shortage of highly qualified teachers, who often search for more remunerative and attractive jobs abroad.

Secondly, a great proportion of doctors, nurse and other health personnel intends to migrate soon after graduation. According to the South African Medical School Survey carried out on 146 medical schools in the African continent, as many as 26% of the respondent graduates reported to have migrated abroad within 5 years after graduation [6]. In some study, as many as 53% of the medical students have indicated their aspiration to migrate after graduation [7]. The

motivations leading health personnel to migrate to more affluent countries are numerous, and probably diversified according to the source country. Among the most quoted reasons in the various available survey are, in decreasing order [4]:

- Better remuneration
- Safer environment
- Living conditions
- Lack of facilities
- No future
- Heavy workload
- Declining health services
- Economic decline
- Poor management
- Upgrade qualification

Understanding the reasons for migration is crucial to define and put into practice strategies to limit the brain drain. Among other factors, attention has been focused on the economic aspect as a key driver of the individual decision to migrate. The importance of the wage gap between source and destination countries have been investigated with contrasting results.

Some authors consider it the key reason for migration, deserving urgent interventions [8] while others estimate that other factors, including working and living conditions, social and political insecurity could play a more important role in the migration decision, leaving little space for interventions based on salary increase [9]. To those reasons it must be added the shortage of physicians, nurses and pharmacists in western countries, that attracts correspondent health personnel to move from their origin country. This is not without cost. It has been estimated that the cost to train a physician in a given African Country may vary from 21.000 US dollars (Uganda) to 58.700 US dollars (South Africa) and that the yearly global benefit obtained by the most desired destination Country is 2.7 billion dollars (UK) and 846 million dollars (the USA) [10]. To counteract this phenomenon, the World Health Organization has lunched the Global Code of Practice on the International Recruitment of Health Personnel [11] requesting all member States to take action to facilitate retention of health personnel in those areas of the world where they are most needed, including financial assistance and partnership to strengthen health education infrastructures. Quite sadly, a recent Cochrane review could only find a single paper assessing interventions to reduce emigration of health care workers complying with the established selection criteria [12].

Thirdly, the social and economic prestige of the health professions is better exploited by physicians and nurses, as well as other health care workers, in the urban setting leaving the most need urban areas with little potential to provide effective care in the poor health structure available. A recent questionnaire survey carried out among medical students in training in six different sub-Saharan countries (South Africa, RD Congo, Kenya, Nigeria, Tanzania, Uganda) showed that only 4.8% of them intended to practice in rural areas, a very worrying figure [13]. However, context-appropriate medical training may correct this tendency, as shown by specific experience in east-Africa showing that exposure of medical students to problem-based learning in the communities may influence their attitude and willingness to work in rural remote areas once graduated [14].

Apart from the quantitative aspect of health education (the number of graduates, physicians, nurses, etc.), the question of quality also applies as a consequence of the scarcity of adequate clinical training structures in developing countries, with particular respect to the African continent.

THE CHALLENGE OF HEALTH EDUCATION IN RESOURCE POOR COUNTRIES

The challenge of education in resource poor countries (and medical education is no exception) is huge and evolving with time. The responsibility of academic medicine in Africa has been affirmed strongly [15]. No single and flat solution probably exists to overcome the economic, structural, cultural and logistic problems in any single situation, as perspectives and experiences in medical education greatly varies among countries [16].

In fact, as rightly pointed out by Brown and co-workers for the Pacific area, many factors may influence learning and teaching in different areas and in different times, including (i) past regional experiences of health related training, (ii) the impact of culture on learning approaches and teaching styles, (iii) the impact of external (i.e. colonial) influences on curriculum and (iv) the logistic and access challenges of open and distance education [17].

To combat global health worker shortages, many strategies have been put forward, with conflicting results.

Task shifting has been advocated by many international Agencies and adopted by many developing Countries as a strategy to cope with the shortage of high level health care professionals such as physicians and surgeons [18]. Task shifting means the progressive inclusion of tasks, traditionally ascribed to the medical or surgical profession, among the job descriptions of lower level health care professionals. Example of this strategy is the administration of antiretroviral

therapy by nurses in rural areas or the performance of simple surgical procedures (hernias, cesarean section, etc.) by nurses in some specific contexts also as a mean to overcome the many limitations of surgical volunteerism [19].

Furthermore, some countries have explored the new strategy of creating new mid-level personnel with the aim to expand health coverage in the rural areas. This strategy, whose results are now being assessed [20], requires the definition of the role of this new actors and the design of specific training curricula, raising the problem of standardization. From one side, the tasks and the training of these specific intermediate category should be adapted to the local situation for which they have been created. However, from the other side, global standardization of curricula would be desirable to share expertise and compare training experiences [21].

Both task-shifting and the creation of med-level health professionals are not to be considered a makeshift solution in resource-poor settings. Indeed, the contribution of such approach to cope with huge public health problems may prove more rationale that more sophisticated approaches involving highly trained specialists. The most brilliant victories of public health in Africa (small-pox, onchocerchiasis, trypanosomiasis, etc.) have been conquered by few generals (the doctors) leading and coordinating a large middle (nurses) or even low level army.

It has also been suggested that retention of health professionals, especially in remote areas, could be improved by the provision of fringe benefits (car, housing, etc.), that might elevate their social and economic status as desired [22]. On the contrary, the widespread use of per diems for in-job training has wasted resources and has incentivized health professionals to actively search for continuous training remunerative activities leaving their clinical duties, an attitude referred to as "*perdiemitis*" [23]. We strongly argue that actions should also be considered to facilitate retention also of the senior faculty staff at the academic level that also suffer from a high rate of migration, depriving the country of the best teaching and management resources.

Reinforcing the perception of the social accountability and ethical commitment of medical trainees with respect to the underserved community is also an endeavor that should be strongly pursued to limit the attitude to migrate. It is comforting to know that attention is being paid to this topic at least in some leader African medical institutions [24].

Finally, the careful planning of training needs for health care professionals (both quantitatively and quantitatively) should involve different sectors at the governmental level, including Ministries of Education, of Health, of Finances and any other relevant official bodies in order to insure sustainability of scale-up, as suggested by the Health World Organization [25]. In particular, the poor planning harmonization between the education sector and the health sector in many developing countries is considered to be a major obstacle to successfully implement a positive and much needed transformation of the global physician education system in resource-poor countries [26]. The survey carried out by the African Medical School Study carefully reviewed the needs of medical education in Africa, also providing sound recommendations to address the issue [5].

WHAT WESTERN EDUCATION ISTITUTES MAY CONTRIBUTE?

Now, in our context, the question is: "how can academic institutions based in industrialized western countries effectively cooperate with academic partners in the southern countries to cope with the shortage of trained health care professionals in those countries most in need?"

Quite surprisingly (and disappointingly), most literature on the medical education needs of resource-poor countries has been published by scholars working in western institutions [16]. Only quite recently, the academic leaders of the southern countries have raised their voice to address the problems and propose solutions [27, 28].

When putting in place a training or research partnership between academic institutions of the North and the South, many possible mistakes may be encountered. Ten of them are tentatively listed below (the ten "sins"):

1. Curricula are designed with a shift towards the needs of industrialized countries
2. Use of sophisticated training material (i.e. skill simulators)
3. Little attention to multidisciplinary approach
4. Tendency to create specialists instead of public health doctors
5. Little involvement of the local public health system and economic authorities
6. Little incentives for local training staff
7. Prolonged period of time for students to be spent in affluent countries, favoring brain drain
8. Social and cultural contexts are not taken into account
9. Unbalance between teaching staff from the north and the south
10. Focus on specific subjects of research with little impact on the final training outcome

Even if partnering for medical education is the more common way to start collaborations, the risks listed above are real and are to be taken into account in order to ensure effectiveness and sustainability. Results of such collaborations are mostly local in size, with little general impact on the education capability of resource-limited settings as a whole. However some positive evidence of more wide networking leading to appreciable, even if preliminary, results do exist [29, 30]. To avoid long periods of stay abroad, the development of joint diplomas (sandwich diplomas) delivered by the partnering universities may provide a suitable solution. Academic hospital twinning initiatives may also contribute to fill the gap of qualitatively adequate training fields that represent a major obstacle for quality clinical training for

doctors, nurses and other health care professionals.

The following are – non exhaustively - among the additional proposed solutions where western academic universities have been considered to play a possible role in assisting academic institution in the south of the world to increase quality and quantity of medical education.

Long distance internet-based teaching resources. They are attractive and have the advantage to limit travels, vacancies and costs. Positive experiences from the technical standpoint have been reported for specific vertical topics, such as HIV [31]. However, such approach requires a very careful design of the curriculum to ensure adaptation to the recipients' settings in terms of social, cultural, legal, economic and, sometimes, religious context. Furthermore, internet-based training requires access to electronic facilities that may be limited in many resource-limited countries, as well as the internet competencies of the trainees [32, 33].

Assistance in quality control procedures, external evaluation and accreditation. The maintenance of high quality of education is a crucial to gain credibility at the national and international level. However, few academic institutions in resource-limited settings have started this process, that may be effectively facilitated by the help of academic institutions in affluent countries, more used to such procedures. Such experience, that may potentially lead to high academic impact, has already been reported recently with positive results [34].

Assisting in developing independent research activity in developing countries. Research capability is crucial to deliver high quality teaching and training. Unfortunately, research (both basic and clinical) is at its infant's stage in developing countries due to the lack of economic resources and skills. Joint research activities have taken place in the past decades between researchers from the North and the South, usually the partner from western partner playing the role of the leader. It is now time that research institutions from the north and the south play a more balanced role , thus favoring the creation of a true independent research career path for young physicians from resource-limited countries, as exemplified by a handle of positive examples [28].

Furthermore, as a general consideration, there is a growing consensus that western destination countries, who most benefit from health care professional migration even in economic terms, should cover a substantial part of the cost involved with these activities [22], a topic that deserves attention in the global political agenda. Finally, we would like to underline the fact that medical training has to consider a shift toward global health and the strengthening of health systems on a global scale, not limited to developing countries but also in the western industrialized nations [35].

CONCLUDING REMARKS

The critical shortage of health care professionals limits the access to care to millions of individuals in resource-limited settings, and particularly in remote rural areas where the need is higher. This is mainly caused by (i) poor training capabilities of academic institutions in developing countries, (ii) the migration attitude of health care personnel to migrate to more affluent western countries, that recruit the best trained personnel with important economic losses to the source country and (iii) the unwillingness of local doctors to work in rural areas that do not offer economic profit and social prestige. This situation requires urgent action, including a profound transformation of the present training approach, as nicely proposed by Celletti et al. [26], as to (i) adapting curricula to local needs, (ii) promoting strategies to retain key faculty staff, (iii) selection of trainees from areas needing doctors, (iv) expose trainees to community needs during training, (v) promote multisectoral approach to education reforms and (vi) strengthen links between the educational and health care delivery system. Western academic institution may help and facilitate this process provided that past mistakes, leading to the underestimation of social and cultural aspect of education and to the constant predominance of the western partner over the southern one, are avoided. Assistance in quality control procedures, in building up research career paths, and the planning of joint diplomas (sandwich diplomas) are among the possible assisting strategies, waiting that the internet technology is more widespread and reliable providing new scenarios for training activities in constant and balanced partnership as stated in Millennium Development Goal n. 8.

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A.P.P.A.® PROJECT: AN EXAMPLE OF INTERNATIONAL HEALTH COOPERATION

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ABSTRACT

The *A.P.P.A.*® Project is the main activity of *Aid Progress Pharmacist Agreement* no profit association; the Project, started in 2005, is the result of the cooperation between the Pharmacy Faculty (TO) and local Pharmacists. The Project is in agreement with the International Health Cooperation principles and it complies both with Italian and guest Countries laws.
Objectives:

- realizing galenic lab in hospitals located in developing Countries (DC) with the aim of preparing medicinal products which comply with adequate quality requirements, first of all to fight the widespread phenomenon of counterfeit in DC;
- customizing the dosages and pharmaceutical forms according to the actual needs of patients;
- employing local staff, teaching them a "new job" in order to open suitable school;
- minimizing the financial commitment necessary to prepare these medicines.

The Project is structured in six phases, through which it is possible to obtain an effective and functional lab: from a preliminary study of local needs up to a constantly and accurate control of the prepared galenics by analysis in the laboratories of University of Turin.
The pharmaceutical forms proposed are liquid, capsules, ointments and suppositories.
The most important results showed that several Projects are going on:

- *Centre Médico-Chirurgical Maternité la Bethanie*, Douala, Cameroon
- Hospital *Notre Dame des Apòtres*, Garoua, Cameroon
- Health Center *Le Bon Samaritain*, N'djamena, Tchad
- Hospital *Heintsoa*, Vohipeno, Madagascar
- Dispensario Diocesano, Ihosy, Madagascar
- Hospital *Nossa Senhora da Paz*, Cubal, Angola
- A.M.E.N. Onlus center, Funda, Angola
- Hospital *Saint Damien*, Tabarre, Haiti

Each lab so far has reached a different state of evolution. All of them are growing day by day, helped by the constant support of all team *A.P.P.A.*®, whose purpose is the one of making them independent from both knowledges in handling galenics and economy in order to buy new raw materials using the gain of medicines sale.

COUNTERFEITS

Nowadays one of the worst plagues of Developing Countries (DC) is represented by the phenomenon of counterfeits. Custom procedures are less stringent, authorities controls are less effective so counterfeit medicines could be easily distributed in the market of these Countries with a substantial loss of public confidence in the healthcare system.

The principal target of counterfeits are life-saving drugs and it increases the risk of resulting deaths, but not only because sometimes it can give rise to events of catastrophic proportions like in Niger in 1995 where about 60.000 people had been injected with a counterfeit meningitis vaccine, or in Haiti in 1996 where a diethylene glycol contamination of pediatric syrup killed more than 80 children [1, 2].

In all DCs anti-retroviral drugs, antimalarics and antibiotics are principally affected, sometimes with staggering percentages: for instance an international study published in 2004 has shown that more than 53% of artesunate tablets sold in south-east Asia did not contain any active ingredient at all, with imaginable consequences on the fight against malaria in those Countries [1, 3].

In order to verify and better understand we have investigated the extent of the phenomenon of pharmaceutical counterfeits in some DC including the Countries where *A.P.P.A.*® is working [4]. With our research we investigated the quality of medicines purchased *in loco* from pharmacies and from unofficial street-pharmacists (figure 1). Samples collected in the different DC were analysed in the laboratories of the Department of Scienza e Tecnologia del Farmaco, University of Turin (Italy).

Fig. 1 - Cameroun, street pharmacist.

Results and discussion

The study we conduced confirmed that counterfeits medicines are one of the most problematic issues in DC and we found that the absence of controls and the inadequate pharmacovigilance system causes difficulties both in revealing and monitoring the phenomenon and its effects among the population.

Based on our results it was possible to determinate that 50% of tested items were substandard drugs and 2% were counterfeits without the presence of declared API: they could be defined criminal false, a dosage form in which the active pharmaceutical ingredient is completely absent or present in an amount absolutely non effective.

The results also show that Indian drugs are often substandard: 30 out of 61 Indian samples (i.e. 41,7%) showed OOS (Out Of Specification) [5].

These outcomes we found are in accordance with international data retrievable in literature [6-9] and confirmed that the main target of counterfeiters is represented by expensive life-saving drugs (table 1) and this trend is likely to be maintained also in the future [10-14]; this research showed that it is rather common to find counterfeits in Developing Countries, even in astonishing percentages (figure 2).

Reported results and discussed topics point emphasize and increase the relevance of *A.P.P.A.*® Project in Developing Countries.

	No. (%) of samples	
Therapeutic classes	**available for analysis**	**counterfeit**
Antibiotics	76 (34.4)	30 (29.7)
Anti-inflammatories	44 (19.9)	22 (21.8)
Antipyretics	24 (10.9)	9 (8.9)
Antimalarics	17 (7.7)	6 (5.9)
Antimycotics	13 (5.9)	9 (8.9)
Antihypertensives	8 (3.6)	1 (1.0)
Antianemics	5 (2.3)	4 (4.0)
Spasmolytics	5 (2.3)	2 (2.0)
Diuretics	5 (2.3)	1 (1.0)
Antiacids	5 (2.3)	2 (2.0)
Bronchodilators	4 (1.8)	5 (5.0)
Others	15 (6.8)	10 (9.9)

Tab. 1 - Therapeutic classes of the total and counterfeit samples [5].

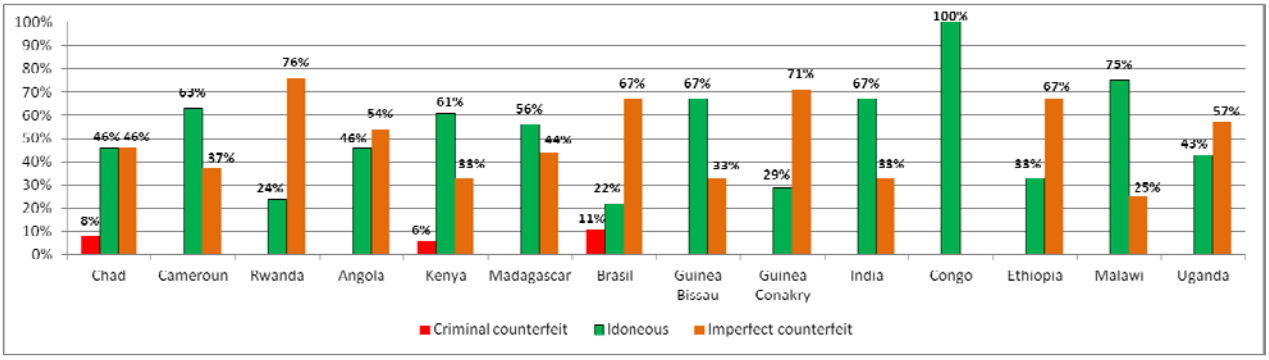

Fig 2 - Presence of counterfeit drugs by Country. Red bars – criminal counterfeit; green bars – idoneous; orange bars – imperfect counterfeit [5].

A.P.P.A.® PROJECT

A.P.P.A.® [4] is a no profit association based on voluntary work without any profit proposing; its main aim is *A.P.P.A.*® Project, which argues on the realization of galenic laboratories in Developing Countries around the globe in accordance with the guidelines of International Health Cooperation.

The creators of the Project teach through the Pharmacy's students to local staff how to prepare galenic medicines with a high level of quality and consequently security and efficacy. *A.P.P.A.*® Project is built on a close collaboration with the academic world, represented by University of Turin, Faculty of Pharmacy, and with Community Pharmacy.

The main objectives of the Project are:

- realizing galenic laboratories in Developing Countries with the aim of preparing medicinal products which comply with adequate quality requirements, first of all to fight the widespread phenomenon of counterfeit in DC;
- customizing the dosages and pharmaceutical forms according to the actual needs of patients;
- employing local staff, teaching them a new "job" in order to open suitable school;
- minimizing the financial commitment necessary to prepare these medicines.

Many are the main reasons to propose galenics: the first one is that the production system is low cost and the operative procedures are simple; the second one, most interesting and important in our opinion, is the possibility to prepare medicinal products with dosage and pharmaceutical forms according to the customer demand and, of course, to medical prescriptions, last but not least, this Project allows to reduce the use of counterfeit medicines in structures where the galenic lab is located.

When a new galenic laboratory is required we usually conduce a preliminary study that implies for an our staff member a trip on site to value the local situation and recipient areas [step 0 of *A.P.P.A.*® Project]. In this step a precise protocol is used to guarantee all preliminary needed information. Furthermore some medicines should be purchased in local pharmacies and sent to the laboratory of the University of Turin, which will provide for the qualitative and quantitative analyses; the results allow to value if these medicinal products, present on the local market, respect the declared characteristics or are counterfeit.

The Project complies both with Italian and guest Countries laws, always saving the quality of medicinal products. The pharmaceutical forms proposed are liquid preparations, capsules, ointments and suppositories.

This feasibility study is essential to evaluate the actual possibility of opening a new *A.P.P.A.*® lab. Only if we find the real need for the galenic laboratory required, as suggested by International Health Cooperation objectives, we can carry out with the following six phases of *A.P.P.A.*® Project:

1. The first one implies the choice of the place where the galenic lab could be realized. The medical doctor responsible of medical center will put in evidence local pathologies, then will be projected the correct pharmaceutical forms.
2. The second one implies a stage at galenic *A.P.P.A.*® laboratory at the University of Turin (Italy), for students of Pharmacy Faculty -during their experimental thesis-; the stage allows learning necessary to prepare the programmed medicinal products.
3. The third one provides staying in Italy of a person of local staff with the aim of learning the procedures of galenic preparations (about one month work) under Pharmacy's students supervision. During this period we send the material for galenic lab to the hospital (figure 3).

Fig. 3 - Italy, Romel Cajuste during his stage at *A.P.P.A.*® laboratory.

4. The fourth one concern in a training period (about sixty days) in the hospital, during which the technician, who has been in Italy to learn galenic methods and procedures, will be coordinate in his work by the Pharmacy's students on site (figure 4, 5).

Fig. 4 - Angola, Funda, A.M.E.N. Medical Center.

Fig. 5 - Cameroun, Garoua, «Notre Dame des Apòtres Hospital».

5. The fifth one concerns in quality control of medicinal products routinely prepared in new galenic lab; moreover some samples of these will be sent to University of Turin, where their quality will be tested.
6. The last one concerns in periodical stages (at least forty days) for students -during their experimental thesis-. These stages will be performed each year both to permit a continuous supervision of medicinal products prepared in the lab and to study new formulations according to the request of the medical doctor responsible of the medical center which might change by the time.

Often many points must be examined and modified considering the reality and requirements of demanding structure, but without losing quality of galenics.

The Project considers a budget which includes equipment but not furniture or raw materials that strictly depends on the therapeutic requirements of the different places. The funds necessary to the whole creation of a lab are raised through the collaboration of groups involved in International Cooperation. It is indispensable to guarantee a good activity of the galenic laboratory for the hospital to reinvest the earning obtained by dispensing of medicines prepared in the conduct of the laboratory. In this way the laboratory will be self-financed and there will be a continuous production. About the raw materials, the hospital can buy them in Italy or other Countries respecting quality and title of the raw materials to be used.

Results and discussion

Several Projects are going on, at different state of progress:

Cameroun - Hospital La Bethanie, Bonaberi-Douala; GinTeam ONLUS; St. Joseph Congregation Hospital, Kribi - Phase 6 of *A.P.P.A.*® *Pro*ject

Cameroun - Hospital "Notre Dame des Apòtres", Djamboutou-Garoua; Fondazione CUMSE Onlus - Phase 6 of *A.P.P.A.*® *Pro*ject
Chad - Health Center "Le Bon Samaritain", Walia-N'Djamena; association tchadienne «Communauté pour le Progrès» (ATCP) ONG; Acra ONG - Phase 6 of *A.P.P.A.*® *Pro*ject
Madagascar - Hospital "Henintsoa", Vohipeno; Anemon ONLUS - Phase 6 of *A.P.P.A.*® *Pro*ject
Madagascar - Health Center, Eglise Catholique Apostolique Romaine, Ihosy; Anemon ONLUS; Lions Club Torino San Carlo - Phase 6 of *A.P.P.A.*® *Pro*ject
Angola - Hospital "Nossa Senhora da Paz", Compañia de Santa Teresa de Jesus, Cubal; Dani Instruments S.p.A; Comunità di S. Egidio – ACAP (O.N.L.U.S.) - Phase 6 of *A.P.P.A.*® *Pro*ject
Angola - Health Center A.M.E.N. ONG, Bairro CowBoy, Funda; Dani Instruments S.p.A; AMEN onlus – Italia - Phase 5 of *A.P.P.A.*® *Pro*ject
Haiti - Pediatric Hospital N.P.H. Saint Damien, Tabarre; N.P.H. Italia Onlus, Francesca Rava Foundation - Phase 6 of *A.P.P.A.*® *Pro*ject
Sierra Leone – Hospital "Saint John of God", Mabesseneh, Lunsar; Saint Joseph Fathers Congregation, Rainbow for Africa, Engim ONG - Phase 1 of *A.P.P.A.*® *Pro*ject

Each lab has so far reached a different state of evolution. All of them are growing day by day, helped by the constant support of all team *A.P.P.A.*®, whose purpose is the one of making them independent from both knowledge in handling galenics and economy in order to buy new raw materials using the gain of medicines sale. Our experience has till now demonstrated that at least 5-6 years are necessary because the laboratory reach its independence if there are not changes of personnel.

GALENICS FOMULATIONS, QUALITY AND STABILITY CONTROL

Magistral and officinal formulations (commonly known as "galenics" in homage to Galen of Pergamum who is regarded as the first pharmacist engaged in the preparation of medications) are required to be prepared, labelled and stored using standard procedures and established methods in order to ensure the quality of finished product which is a mandatory prerequisite for its safety and efficacy [15, 16].

Since *A.P.P.A.*® Project is based on galenics, we had the necessity to perform a survey on the stability of various galenic dosage forms commonly prepared in pharmacy, in order to investigate the actual stability of these medicinal products [17, 18].

We endeavoured to gather information on stability of galenics at extreme environmental conditions (high temperatures and relative humidity) that might prove useful in those Countries (e.g., African ones) where the tropical climate is a serious threat for the quality of drugs.

Moreover, considering that one of the main aim of *A.P.P.A.*® Project is the fight against counterfeits and then the production of quality medicinal products, we settled up procedures to make quality control tests on galenics produced in our laboratories in order to verify and guarantee their quality.

Results and discussion

Storage conditions, chemical and physical nature of the API, containers, environmental conditions and the compatibility of API with excipients might affect considerably the final quality of galenic preparations.

All these factors, considered as a whole, define the use-by date of medicinal products that must be reported on the label. The current legislation has decided to define precautionary validity limits for galenics depending on the nature of their dosage form, leaving to the pharmacist the option to increase these limits relying on scientific data. [19].

Based on our results it was possible to determinate that in tropical Countries the tested dosage forms are stable for a period of 24 months in "Standard" conditions [17]. In "Accelerate" conditions [17], samples were stable for 3 month provided that they have been stored in glass containers, propylene is not suitable at high temperatures due to probable interactions of active substances with extractables and leachables materials from the container. Stability results of samples stored in "Accelerate" conditions also supplied precious information on the expected stability of galenics in tropical Countries where extreme environmental conditions are often a limiting factor for correct storage of drugs. The results do not imply that it is possible to increase the use-by date of all galenics, but it can be done for those dosage forms tested and prepared following standard general principles [16, 20].

To guarantee the quality of medicinal products made in *A.P.P.A.*® labs we constantly analyse some samples applying procedures in line with the tests of the European Pharmacopea. The results of the analysis must be within the limits imposed by the law in force, otherwise the medicinal products can not be used [16]. In any Country we operate we claim to meet the requirements of quality, safety and effectiveness required; the consequence was a good answer by local technicians and their proposal to better apply the standard procedures established and shared.

CONCLUSION

A.P.P.A.® Project started in 2005, till now we opened an amount of 8 galenic laboratories in 5 different Developing Countries between Africa and America. The laboratories are now working on and they are at various state of progress. In 8 years about 30 students of Pharmacy have been involved in this Project and about 30 local technicians are working in the opened laboratories.

Through the positive results obtained from the steady execution of quality control tests on galenics made in our labs we demonstrated that it is possible to produce good medicines even in Developing Countries where conditions are not always in favour. It proves that the procedures that we settled up during these years are reliable methods that guarantee the production of medicinal products of high quality.

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GHC-TUSCANY: NEW PARTNERSHIPS FOR THE GLOBAL HEALTH

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ABSTRACT

The Global Health Center is a multidisciplinary facility of the Tuscany Region. Its function is to highlight the connections established between globalization and health in terms of equity, human rights, sustainability, diplomacy, and international collaborations. The Center has a global outlook and allows university professors, university researchers, PhD, graduate students and students from various disciplines, doctors and other healthcare workers (biologists, obstetricians, nurses, medical assistants, etc.) as well as health sector representatives from volunteer organizations to join together, and study and experiment with approaches to both academic and operational global health issues.
The Center will activate transverse and connecting actions in four thematic priorities of interest among all Tuscan, national, and international stakeholders so as not to waste energy, resources, and the capacity for intervention: International health cooperation, Neglected tropical diseases, Health policies, Migrant health.
The Global Health Center is the result of an innovative alliance between healthcare organizations, the Region, the Universities and the organizations and associations, in fact, is based on a partnership that aims to involve, in one direction, all those who are involved in various capacities, in international health cooperation projects implemented by Tuscany Region. In particular, we would like to present three projects in different areas of the world where, thanks to a fruitful collaboration between the University of Florence, the Tuscany Region and the local health authorities, where the opportunity to experiment the added value of the dialogue between various entities and the involvement of the Academy had a significant impact both in the home country as well as in the local contest, We therefore present the results of the following projects aimed at supporting: i) the implementation of the Sistema Unico de Salud (Health National Service) of the Plurinational State of Bolivia: a pilot project in the Chaco Region; ii) the development of Paediatrics and Digestive Endoscopy Medical Center in Nanoro - Burkina Faso; iii) the design of a National Health Accounts and a Diagnostic Related Groups (DRG) Patient Classification Systems in Albania and Developing a Model Prospective Payment and Contract System for Hospitals.

During the last years, a new trend has emerged in the Tuscany Region: it has been consolidated the need to spread awareness of existing inequalities and the causes that have produced them, and the right and duty of citizenship to participate at the decisions regarding the health of all, the duty of the scientific community to systematically address the issues of equity, sustainable development, defence of the dignity and life, the need for deeper study, the independent assessments of a wide transmission information and knowledge, the need to implement international cooperation projects characterized by a system approach to health. This need has been expressed by healthcare professionals (doctors, researchers, academics and representatives of the voluntary sector). This is the main reason why it was born the idea of establishing a facility, whose main objective is the study of the effects of globalization on health. The Global Health Center of the Tuscany Region was established by Regional Council Resolution n. 909 of 15/10/2012. It is a multidisciplinary facility of the Tuscany Region whose objective is to highlight the connections established between globalization and health in terms of equality, human rights, sustainability, diplomacy, and international collaborations.

The Centre based its theoretical approach on the social determinants of health and on the principles of the Declaration of Alma Ata. It uses a multi-disciplinary and multi- methodological approach, with the contribution of both the social sciences and humanities both the natural and biomedical sciences, with a privileged relationship with medical anthropology. The Center has a global outlook and allows professors, university researchers, Ph.D. and university students in various disciplines, doctors and other healthcare workers (biologists, obstetricians, nurses, medical assistants, etc.), as well as health sector representatives from volunteer organizations to join together, and study and experiment with approaches to both academic and operational global health issues.

The Global Health Center promotes the development of 'country projects' - recovering the organizational schemes of International Organizations, in order to help determine favourable conditions for a better quality of interventions not only among the different local actors but also between all the actors that operate in the same area, making an essential contribution to improving relationships and interaction for the co-development. It recognizes the complexity of the health sector and the changing context of global health where growing inequalities helps to fuel the recursive relationship between poverty and health.

The fundamental objective is to enhance, disseminate, and apply knowledge to the four thematic priorities on which the Center is funded.

The Center will activate transverse and connecting actions in four thematic priorities of interest among all Tuscan, national, and international stakeholders so as not to waste energy, resources, and the capacity for intervention. The four thematic priorities are: international health cooperation, Neglected tropical diseases, Health policies, Migrant health.

It is a unique experience in the institutional landscape in Italy, and it has the ambition to be a pilot project. It confirms the principles that the Tuscany Region states both in the "Social and Health Integrated Plan" and in the "Plan of International Activities", developing a shared and integrated planning, addressing the social aspects health too, trying to innovate a careful but often one-dimensional health vision. In particular, these are the general objectives of the Centre: i) the growth of health workers knowledge (to know), attitude and ability (skills), both during the period of academic training that along their career path, in order to integrate their job profile with essential skills about emerging health needs; ii) the dissemination of knowledge about the social, cultural and environmental determinants that influence health and disease, nationally and internationally, and the ability of medicine and public health to influence them; iii) the recognition and respect of the existence of the plurality of visions of health and disease, as elements that characterize the individual and cultural identity.

The Global Health Center of the Tuscany Region is based in Florence at the Meyer Children Hospital.

The International Health Cooperation activities and the care of children from all over the world is a tradition and a part of the history of Meyer Hospital. This tradition was acknowledged by a legislative act of Tuscan Government on March 26, 2001, which designed the structure of the International Health Cooperation network of the Region.

Since then, the Meyer Hospital has been managing the activities of international health cooperation on behalf of Toscany Region, coordinating the network of International Health Cooperation trough focal person dislocated in each hospital and local health service with the mission of improving global health. International health cooperation is a key-point of the program of the Government of the Region of Tuscany, and it plays an important role in addressing the challenge of cooperation as a contribution to the development of the most disadvantaged countries in the world. In this moment the Tuscany Region is financing approximately twenty international health cooperation projects, implemented in various areas of the world, especially Sub-Saharan Africa, Latin America, the Mediterranean and the Balkans Beyond the vertical approach by pathology or population, the regional health cooperation strategy aims to strengthen approaches that are cross-cutting, so as to address the structural challenges which put pressure on health systems and thus promote universal access to safe, effective and affordable quality treatment. The priorities of the strategy are:

- the promotion of the health of women and children;
- The fight of communicable diseases;
- The strengthening of health systems and the improvement of access to treatment through the training of human resources and the promotion of both models of sustainable financing for health and efficient health information system in order to guarantee equality of access to care.

Education and training are the common ground for the cooperation between University and Regional Institution. This is not surprising: there has always been a strong emphasis on training in our regional cooperation and in the current international context of increasing globalisation, the conditions of knowledge production, scientific and technological capacity and the volume of information flows, are factors that can determine the economic and social development of countries. Besides the concept of training means a "donation" of technical elements, best practices and working methods, but also provides a return, a sharing of values and knowledge, the enhancement of human potential. In fact, the international health cooperation facility in Tuscany is based on a participatory approach, involving all the Regional Health Service. The specificity of the on-site training also involves to "take home" experiences and contributions that will give added value to our workers and our health services

For all the above reasons, universities cannot be absent from discussion of development issues; in fact, they are becoming fundamental actors in development co-operation. Even though exchange has always been a part of the University essence, we are now witnessing an important movement towards internationalization, which cannot be indissoluble from the phenomenon of the globalization of culture and exchanges. In the international health field, universities, either in the South or North, have traditionally played an important role which is ever expanding, due to the broadening of the concept of international health. Tuscany was not immune from this process.

In recent years, universities in Tuscany have incorporated international relations and international co-operation as integral parts of their missions and functions. In this way, the university has assumed the responsibility of "co-operating" with other institutions, of working together with others for the same ends. In the Global Health Center all the three Regional Universities are represented trough a unique representative.

The support from the Universities in the implementation of some projects has given interesting results. The starting point is that a doctor in training needs some notions and expertise that can rarely be learned in the standard training of the University. It is therefore important to disseminate the awareness that the health system is changing, globally but also locally. For this reason, the Global Health Center of the Tuscany Region organizes regular training activities in the field of global health at the three Tuscan Universities - Florence, Pisa and Siena - and also at a national level. These training courses are related to the four thematic areas of the Centre, with the idea of a virtuous circle of knowledge that establishes the basis of a comprehensive concept of health. One of the possibilities that are offered to doctors in training

(and not only) is to participate in projects of international health cooperation; in particular three projects in different areas of the world have been designed and based on the involvement of the Academy: i) Support and technical assistance to the implementation of the *Sistema Unico de Salud* (National Health Service) of the Plurinational State of Bolivia: a pilot project in the Chaco Region; ii) Support for the development of Paediatrics and Digestive Endoscopy Medical Center in Nanoro - Burkina Faso; iii) Designing a National Health Accounts and a Diagnostic Related Groups (DRG) Patient Classification Systems in Albania and Developing a Model Prospective Payment and Contract System for Hospitals .

1. PROJECT "SUPPORT AND TECHNICAL ASSISTANCE TO THE IMPLEMENTATION OF THE *SISTEMA UNICO DE SALUD* (NATIONAL HEALTH SERVICE) OF THE PLURINATIONAL STATE OF BOLIVIA: A PILOT PROJECT IN THE CHACO REGION"

The project is part of a number of previous initiatives carried out by the University of Florence, through the Division of Infectious Diseases, starting in 1986 and formalized in 1987 through the signing of an agreement with the Bolivian Ministry of Health, which is still in force. In particular, the main activities were: scientific research and supporting the training of local health workers to promote and support the improvement of public health services of the Chaco Region, especially in the rural areas, where the main population is part of the Guarani ethnic group. In these twenty-six years of constant work, all the activities were carried out according to protocols agreed between the parties. The results of the main research activities have been published in international scientific journals and initially reported in a publication by the Ministry of Health of Bolivia in 1997 (Revista Boliviana de Epidemiologìa).

In 2011 it was realized the publication of a book entitled "25 años de Investigación en el Chaco Boliviano en el marco de Convenio entre Cátedra Enfermedades Infecciosas de la Universidad de Florencia, Italy, y Ministerio de Salud y Deportes de Bolivia" containing all the 47 articles translated into Castilian on the scientific work carried out in the Bolivian Chaco. The publication was produced on-site with the help of PAHO / WHO, and is currently spreading in print and online. After many years of experience and scientific clinical trials conducted in Latin America, some doctors working in the Division of Infectious Diseases / SOD Infectious and Tropical Diseases in Careggi Hospital, Florence, have developed a specific expertise in tropical diseases, useful for the correct approach to the diagnosis and the treatment of imported pathologies. The project is very articulate, and it provides the following activities: the epidemiological study of infectious diseases in animals and humans, the containment of the spread of bacterial resistance to antibiotics in the area by monitoring the phenomenon in commensal bacteria and pathogens and promoting the prevention of infections in a hospital setting (from the implementation of programs for hand hygiene), strengthening of laboratory services for clinical and microbiological analysis through ad hoc surveys, training of technical personnel and implementation of new methods, control of epilepsy in rural areas and support the epidemiology on promoting independent community organization. Another area of action is the emergency / urgency, in all its aspects: organizational, training and capacity effective and timely response. This last point is a significant element of an universalistic health system.

The priority of the project is now the opportunity to continue working with the Ministry of Health of the Plurinational State of Bolivia, to consolidate this data and especially to implement, together with the local medical team, protocols that can prevent and manage these serious public health problems, and to understand how to integrate these important results in the reform under way in the National Health System. The Health system currently in force is in fact deeply fragmented and it causes unequal access to services. For this reason, the current government is trying to move towards a *Sistema Unico de Salud*, a single system of health, already mentioned in the new Constitution, that aims to provide the access to health services to the entire population, especially the most marginalized. For this reason, it is very important to verify how the Bolivian Ministry of Health is influenced by the Tuscan activities in Bolivia and by the analysis and systematization of the results of studies conducted by the University of Florence. A positive signal is that the Bolivian Ministry of Health has required the Tuscan support, in this phase of restructuring and redefinition of the national health system,. The idea is to try to share the sustainable best practices and the difficulties faced by the Italian health system, and in particular the Tuscan one. For this reason, exchanges and analysis between the two territories will be favoured. On this basis, the Bolivian Ministry of Health has initiated a process aimed at the implementation of the *Sistema Unico de Salud*- SUS, an universalistic health service. This project aims primarily to offer support to the implementation of the Unique Health System, as a pilot project in the area of the Bolivian Chaco.

2. PROJECT "SUPPORT FOR THE DEVELOPMENT OF PAEDIATRICS AND DIGESTIVE ENDOSCOPY MEDICAL CENTER IN NANORO - BURKINA FASO"

This project aims to contribute to the creation of a facility that could ensure an adequate classification and treatment of diseases of childhood, reducing the infant mortality rate in the district of Nanoro. The general objective is to reduce the infant mortality rate in the district hospital through better taking care of paediatric patients. The project started in April 2008 with the creation of a small department of paediatrics and the activation of an agreement between the University of Florence and the Camillian Community. The agreement provides the continued presence of Italian doctors

of the School of Paediatrics in Florence in order to assure the efficient coordination of the activities with local nurses. Before the start of the project, Medical Center of Nanoro was equipped with a department of general medicine with a total of 18 beds including 6 for inpatient paediatric and a recovery center for education nutrition for children suffering from malnutrition. The patient care was not delivered by a specialized in paediatrics nursing team, and co-ordinated by the presence of an internist adult. The first measure taken was to create a paediatric department separate from the adult one. In June 2009, the construction of a new paediatric ward was complete, which currently has 36 beds, 6 inpatient rooms and a room reserved for the most critical patients as equipped to supply a continuous flow of oxygen. At the same time 5 new local nurses dedicated to Paediatrics were hired. From 1 April 2008 to the present, it have been guaranteed the continuous presence of at least one physician specializing in paediatrics, trained in the management of paediatric and tropical diseases, supervised by periodical mission of a specialist tutor.

The task of tutors and trainees, in addition to clinical activities, was to organize training courses for nurses and health personnel that must provide health and hygiene education for the mothers of sick children. Applying the WHO guidelines, the group developed protocols on the most common paediatric diseases (malnutrition , malaria, diarrhoea, pneumonia, meningitis, blood transfusions). The application of these protocols improved the management of patients with a better optimization of resources. The hospitalization times have been abbreviated, especially for some diseases, such as diarrhoea, and the number of readmissions for the same diagnosis is reduced. The project plans to continue and improve ongoing activities: continuous presence of expatriate medical staff, training of nurses and mothers, writing diagnostic-therapeutic protocols, provision of medical supplies, medicines and medical equipment. To improve the assumption and management of malnourished patients, since 2010 has been applied the new outpatient approach, in witch was originally planned the use of “Ready to Use Therapeutic Food” (i.e. Plumpy nut), a peanut and milk -based paste that does not require cooking and is storable for months. This approach was reserved for uncomplicated cases (moderate and severe malnutrition without co morbidities) followed with periodic outpatient visits, and it had the advantage of reducing hospitalizations and therefore costs. The critical factor, however, is that the Plumpy nut is not produced in Burkina Faso, but imported. So, if it was able to treat well the malnourished in the first period, it has not deeply affected on the prevention of malnutrition. For these reasons, the project is now proposed to improve the nutritional taking care of children with moderate malnutrition, through the production of enriched flour produced starting from local ingredients that can be easily found by the mothers, and the identification of patterns of diet reproducible at home. One of the new objective of the Nanoro project is to take care of the new-borns. The majority of infant mortality, as confirmed by data from the literature, it is currently focused in this age of life, after the improvement of paediatric care in later life. The main reasons of the high neonatal mortality are: the lack of adequate training of the staff, the very low access of women to the prenatal visits during the pregnancy, the non-attendance of equipment essential for proper management of childbirth and deliver. Most of the neonatal deaths are caused by largely preventable factors, like hypoglycemia, hypothermia and chernittero. Therefore, the project proposes the creation of a specific training course of obstetrical and nursing personnel, through the drafting of specific protocols and the purchase of essential equipment.

Given the high prevalence of gastrointestinal and liver diseases both in adults and children, the project activities has been concentrated on the establishment of a service of digestive endoscopy. There were several missions by expatriate doctors and nurses that permitted the training of three Burkinabe nurses who are now able to perform diagnostic endoscopy and to guarantee disinfection and maintenance of the instruments. It is now necessary to continue the training and supervision to implement the service of diagnostics and to guarantee operational tests too. Finally, the evidence of the high prevalence of cardiac diseases in young adults and also in children and in the elderly, has indicated the need to start a training program for nursing and medical staff.

3. PROJECT “DESIGNING A NATIONAL HEALTH ACCOUNTS AND A DIAGNOSTIC RELATED GROUPS (DRG) PATIENT CLASSIFICATION SYSTEMS IN ALBANIA AND DEVELOPING A MODEL PROSPECTIVE PAYMENT AND CONTRACT SYSTEM FOR HOSPITALS ”

The health sector is defined as the priority sector in the Albanian Strategy for the social and economic development. The Albanian Health sector is in the continuing transformation in the function of the realization of the proper standards. To realize the reform in this sector and to help the decision makers in their decision is necessary to have the right information on the source of the financing of health sector, on the destination of the expenditure in this sector and their control. Preparing a national health account in accordance with the international standards in this field, should make it possible the comparability of the performance of the indicators of health sector with them of other countries, so that the Albanian authorities and International Organization which support the development of this sector in Albania, have proper tools in order to define the way and the funds necessary to develop this sector in Albania

The wider objective of the project is to contribute to preserve and improve the health of the Albanian population by increasing efficiency, maximizing productivity in service production and rationalizing the use of resources within public health services.

The project aims to do this by supporting the MoH in the implementation of the strategic priorities aimed at reforming Secondary and Tertiary level of Public Health Care Providers (STC) organizational, managerial and financial

mechanism thus contributing to the Albanian Government efforts to establish a health care system that would meet the needs of the population in a more efficient and cost-effective manner within the available resources

Specific objectives of the project are:

1. increasing the capacity to manage STC services in a more efficient way by standardizing administrative guidelines and procedures for managing facilities and by training and continuous education in order to improve the managerial skills and competences of decision makers and to strengthen capacities among the staff in key positions of the health care system and within the STC.
2. Improving the health care system financing, including minimizing informal money flows. In particular the project will seek the reduction of informal money flow within the system by monitoring the mechanism of service deliveries through the introduction of: the Health Information System, the Diagnostic Related Groups (DRG) classification systems.

Partners of the project re the Albanian Ministry of Health, Tuscany Region and two Universities the one of Florence and the Catholic University "Our Lady of Good Counsel" in Tirana. The project has started in 2010 and is still ongoing.

The project includes two main components:

I. Technical Assistance for Policy Design and Implementation. This component would develop the training instruments required to achieve the objectives set forth in Ministry's strategy in the areas of regulation, financing, institutional development and health service provision in terms of human resources skills and capacities. The component has already started and has provided technical assistance and training in the methodology and tools (auditing, budgeting and accounting) of financial accountability.
   - In particular training through workshops an on the job training to the Ministry of Health and National Hospitals personnel on accounting and internal controls and DRG system has been carried out. The target groups of these activities were, first of all, the policy planners in Health Ministry and Agencies dealing with health financial resource allocation and health governance as well as health insurance fund staff, medical institution managers and medical personnel. At least 260 people benefit from this technical training.

II. The second component is intended to develop the medium term and action plan for the introduction of the DRG system in collaboration with all stakeholders and submit the plan to be adopted by the Government and identify and develop planning and management courses to be attended by selected staff working on accountability and DRG issues. At this point an assessment study concerning the usefulness and reliability of the existing administrative rules, operating procedures and data base and software in selected pilot hospitals with regards the financial accountability has been carried out and specific recommendations on the national procedures and standards as well as on the system concerning accountability has been submitted to the Ministry of Health.