



**DOCTORS  
WITH AFRICA**  
CUAMM



## **HEALTH AND DEVELOPMENT**

quarterly magazine  
of international cooperation  
and health politic  
December 2012 — No. **65**

# BRIDGING THE GAP



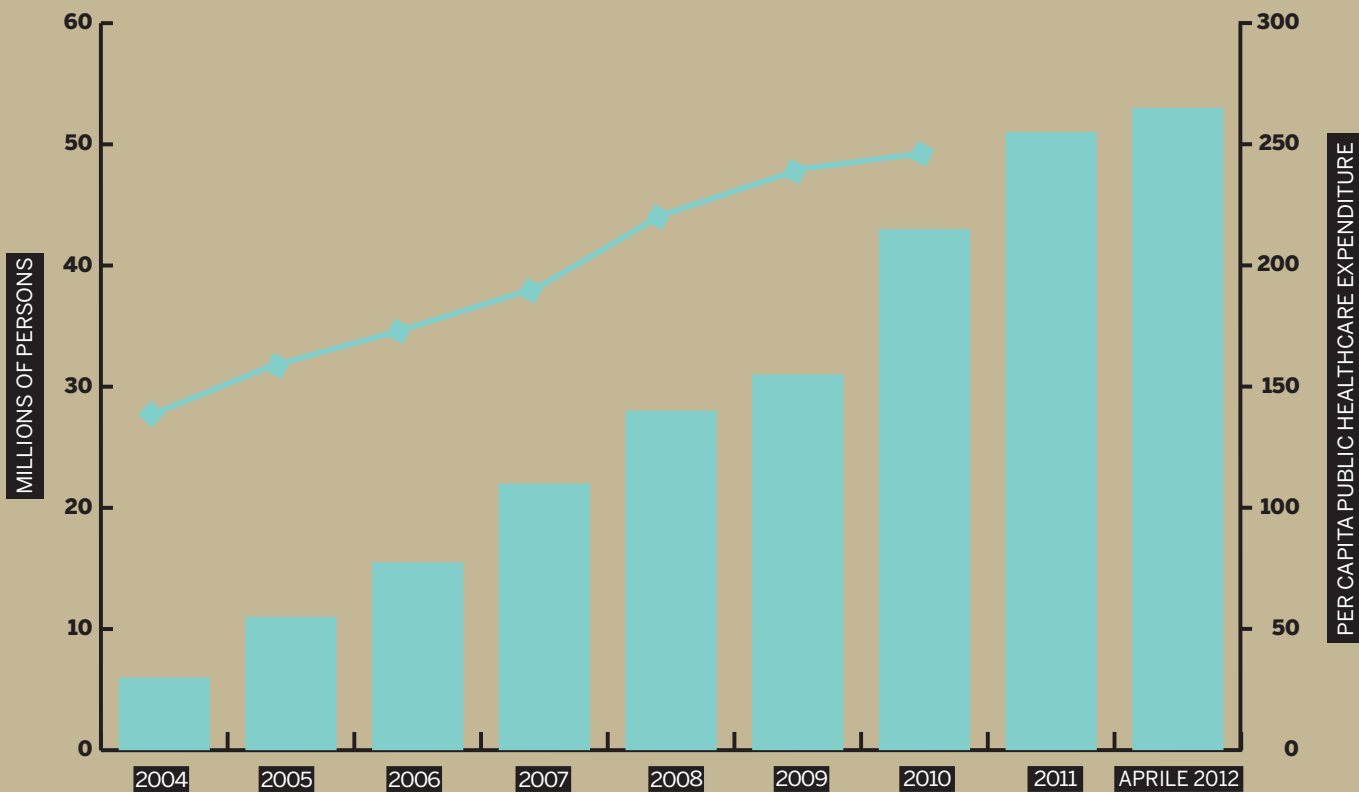


# NEWS

## Health for all in Mexico

2012 is an important date in the history of Mexican health and for the nation as a whole: it was the year universal health coverage was achieved. Nine years earlier, in 2003, half the Mexican population (over 50 million people, mainly with low incomes) were without insurance coverage and, in the event of illness, were exposed to catastrophic expenses or forced to go without treatment due to lack of money. The axes in the figure show the trend in coverage (millions of persons) while the line indicates the trend in per capita public healthcare expenditure (dollars).

**FIGURE /** TREND IN ENROLMENT IN SEGURO POPULAR AND RELATED PUBLIC HEALTH EXPENDITURE PER CAPITA. PERIOD: 2004-2012



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#### REGISTRATION AND AUTHORIZATION

c.o. the Law Courts of Padova n. 1129  
on 5.6.1989 and on 11.9.1999

#### DISPATCH

in abb. post. D.L. 353/2003 (conv. in L. 27/02/2004 n° 46) art. 1  
comma 2 - DCB Padova

#### TRANSLATION

Joanne Fleming

Cover illustration by Ramon Pezzarini.  
*Bridging the gap*, building connecting links between countries and societies, reducing inequalities and structural deficits. In our cover, bridging the gap means implementing projects in Africa, Italy and Europe that stimulate dialogue among various players and bring cultures together.





## DIALOGUE

# ALMA ATA TAKES ITS REVENGE

Thailand and Brazil, countries with deeply different traditions and cultures, have both opted to invest in primary care to guarantee all citizens the right to care. A lesson for all of us, 34 years after the Alma Ata Declaration. Despite of this, in Europe universalistic health systems are likely to be swept away by the neo-liberal policies.

TEXT BY / GAVINO MACIOCCO / DEPARTMENT OF PUBLIC HEALTH, UNIVERSITY OF FLORENCE

While universal healthcare systems in Europe, the birthplace of the welfare state, run the risk of being swept away by liberalist policies and drastic public spending cuts, other parts of the world (once referred to as the “third world”) are now discovering the lure of universal health coverage and are investing in the primary health care promoted by WHO at the Alma Ata Conference of 1978. This is the case of Brazil and Thailand: two countries in two different continents, with completely different political histories and sociocultural settings.

Thailand was one of the few countries to fully apply primary health care strategies<sup>1</sup> immediately after Alma Ata. Since the end of the 1980s, the rural healthcare organization has been based on a district model: a geographic area with a population of approximately 50 thousand inhabitants served by 10-12 health centres and a district hospital. The rural health system has always rotated around nurses and public health providers whose extensive basic preventive and clinical work has led to a reduction in child mortality from 70 per thousand live births in 1970 to 8 per thousand in 2010. Maternal mortality is also low (110 deaths per 100 thousand live births) compared with other countries in the region. Interestingly, serving in the rural areas is compulsory for all health professionals, including doctors.

Before 2001, the year of the reform, the healthcare system in Thailand was based on a complex public and private insurance system leaving 25% of the population without health insurance. In 2001, parliament approved a health reform designed to provide equal access to quality healthcare, according to individual needs, irrespective of income and socioeconomic status. This universal reform was referred to as the 30 *baht* (equal to 0.60 euros) reform, because no-one would need to pay more than 30 *bahts* for healthcare services, including medication, be they inpatients (30 *bahts* per hospital day) or outpatients (30 *bahts* per examination). Each person has to register at a public health unit (i.e. a health centre or district hospital) in his/her district of residence. This becomes both the point of access to primary health care and the place of referral to secondary specialist care (at a provincial hospital). These primary care units therefore act as a filter or gatekeeper and help control the costs of medical care.

In Brazil<sup>2</sup> the Family Health Programme (*Programa Saúde da Família - PSF*) was approved in 1994. The scheme is based on the creation of primary care teams formed by a doctor, a nurse, an auxiliary nurse and 4-6 *Agentes Comunitarios de Saúde* (community health workers). Each team is based at a health centre and covers the primary care needs of a well-defined geographic area, for a population of 600-1000 families. The PSF was originally considered to be a system for providing care for the destitute and was optional. (Prior to 1998 it had only been introduced in 12 out of 27 states and received very low funding).

The PSF got its big break during the presidency of Luis Inacio Lula da Silva, which began in 2002. Under his government, funding for the PSF rose steadily, increasing almost four-fold in 2010, with a parallel increase in the number of PSF teams and of municipalities covered by the *Estratégia Saúde Família* (5,251 out of a total of 5,564). The scheme covers a population of approximately 98 million inhabitants (52% of the total, compared to 32% in 2002). This community healthcare model also gives access to secondary and tertiary care provided by public or private subsidized facilities. The model has improved access to care across the board and scaled up health prevention and promotion activities targeted at the more vulnerable social groups, particularly in the poorer parts of the country, i.e. the North and North-East. The strategy to strengthen primary care has involved both staff (in less than ten years, the number of doctors, nurses and community health workers operating under the PSF has doubled) and basic healthcare facilities, represented by the health centres. This is paralleled by an increase in access to and use of primary healthcare services, with a significant reduction in hospital admissions.

## NOTES

1 W. Patcharanarumol et al., *Why and how did Thailand achieve good health at low cost?* in: 'Good Health at Low Cost' 25 years on. What makes

a successful health system? London School of Hygiene & Tropical Medicine (Editors: Dina Balabanova, Martin McKee and Anne Mills).

2 J. Paim et al., *The Brazilian health system: history, advances, and challenges*, Lancet 2011; 377: 1778-97.



## DIALOGUE

### WALKING WITH PEOPLE

4 October, 1962: Pope John XXIII embarked on a train journey to the Italian regions of Marche and Umbria, to ask for the blessing of Our Lady of Loreto and Francis of Assisi, prior to the start of the Second Vatican Council, one week later. He was the first pontiff in over a century to travel by rail. Before him, in 1857, Pius IX had crossed several Papal regions by train.

TEXT BY / DANTE CARRARO / DIRECTOR OF DOCTORS WITH AFRICA CUAMM

John XXIII, affectionately known as the “good” pope, embarked on a journey, and with him the Church. Elderly, tired and aware of his illness, he boarded the train and departed, leaving the reassuring, protective walls of the Holy City as a pilgrim in search of the light beyond. “He sought not to create a new faith but to gain deeper understanding, in order to bring about real renewal,” wrote Pope Benedict XVI in a special issue of the *Osservatore Romano* newspaper devoted to the fiftieth anniversary of this milestone event of the 20<sup>th</sup> century Church. In his search, he headed for Loreto and Assisi, but his true destination was the new, enthralling but terrible challenges facing man. In his opening address at the Council, on 11 October 1962, Pope John XXIII spoke of the Church’s need to “update”. “What is needed”, he maintained, “is that this certain and immutable doctrine be studied afresh and reformulated in contemporary terms”. He spoke as a shepherd and a Church anxious to accompany mankind. A Church desirous to “be part” of the history of man, intimately supportive of the world, engaged in sincere universal dialogue, barring no one; aware of having much to give and much to receive. Hence the need to go out, meet people, listen to them, be open to criticism, surmount the temple walls and get closer to where people live and work, build their futures, suffer and die. Fifty years after the Council, we have a duty and a responsibility to resume that journey.

Fifty years on, we are even more in need of concrete, daily, silent, tenacious, “unassuming” examples. Words, sermons and official documents have lost credibility as they are often belied by experience. Now, as then, we need examples of service, dedication and performance of extraordinary and “routine” duties. What are required are small but tangible examples.

Pope John XXIII was literally glued to his window throughout the journey, or so it was alleged by the newspapers and by the immense crowds gathered in the stations. It was the first time a Pope had granted an audience among the people and not from the top of a tall building. Among simple, humble, poor people. The Pope penetrated the very fabric of their lives, met them on their own territory, amidst their anxieties and expectations. They could identify with the train and the Pope seemed more like a travelling companion, a friend. Even the most destitute finally felt welcomed and held in consideration. This Church adopted simple means and was mindful of the poor. A month before the Council, in a radio message to all the world’s faithful, Pope John clearly stated that, “... the Church presents herself as what she is and what she wants to be, a Church of all, and particularly a Church of the poor”. Moreover, Pope John specifically placed the Second Vatican Council under the protection of St. John Chrysostom, Father of the Church (344-407), later proclaimed Pastor and Doctor of the Church and Archbishop of Constantinople. A man renowned for his devotion to the poor, who donated his considerable wealth to the construction of hospitals and to assisting the needy. He was called “advocate of the poor” because of his unceasing work to achieve a fairer, more equal share in wealth for all people. Almost all his homilies passionately defended the right of the needy to receive help and the duty of the rich to give generously to the poor, with frequent references to lack of social conscience, to luxuries and to wastefulness.

Considering the social injustice we experience every day, the train seems a good paradigm for today’s Church, which should effectively support and fight alongside those in need.

Let the example of the good Pope travelling among the humble accompany us on our journey to the very last mile. We wish to continue to spread our message, offer real support, and adventure down unknown roads in forgotten parts of the torn but silent continent of Africa. We wish to pursue our journey to turn our values into real projects and actions and to reassert the right to health in every corner of the globe.

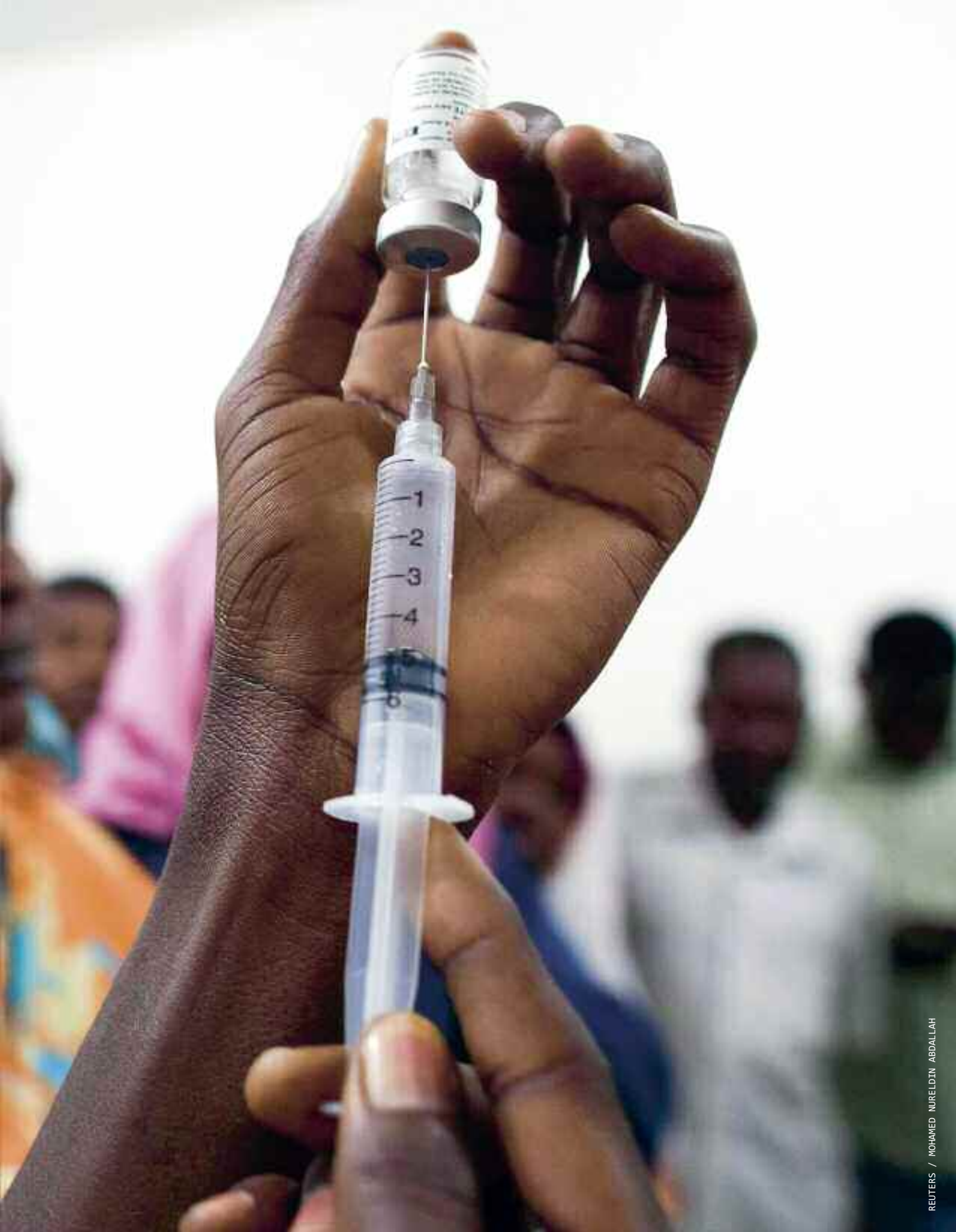




### **YELLOW FEVER IN DARFUR**

It was launched last November, in Darfur, a campaign against yellow fever, which has killed 116 people out of 459 reported cases. The goal is to vaccinate 2.4 million people in 12 of the 57 towns of the State of Sudan. This was announced by the UN Office for the Coordination of Humanitarian Affairs (OCHA). A first quantity of 800 thousand doses of vaccine have already been delivered in recent days to the Ministry of Health of Sudan by the International Coordination of vaccines.







## GLOBAL HEALTH EDUCATION: THE POLISH STUDENT'S VIEWPOINT

Italian students of SISM compare their experience on Global Health education with their colleagues from Poland. A way to share the objectives and to ensure that the change in teaching of medicine is synergic and concerted, in every part of the globe. The challenge is to involve young people on this issue.

TEXT BY / ALICE PERFETTI, DAVIDE CIRINGIONE, VALENTINA GAMBINO AND MARIA ROSARIA ACQUARO / SISM (ITALIAN MEDICAL STUDENTS' SECRETARIAT)  
DAGNA CHWAŃSIANEK / IFMSA POLAND (INTERNATIONAL FEDERATION OF MEDICAL STUDENT'S ASSOCIATIONS)

Interest in Global Health education is not limited to Italian medical students. Other European student associations besides SISM, including IFMSA-Poland, are also taking part in the *"Equal Opportunities for Health: action for development"* project.

In this article we, a group of SISM students, interview our Polish colleagues to find out how they were introduced to Global Health issues, what steps have been taken to include these issues in the local curricula, and what are the future prospects. We feel it is essential to regularly exchange ideas and share common objectives with other students, for the mutual benefit of one another and to ensure that changes in the teaching of medicine are really "global", i.e. synergic and agreed upon throughout the world.

### HOW WERE YOU INTRODUCED TO GLOBAL HEALTH ISSUES?

In the era of globalization it is pretty hard to find a medical student who has never heard of changes in the contemporary world, such as the crisis of healthcare systems or healthcare emergencies in developing countries. This is particularly true of members of student associations like the *International Federation of Medical Student Associations* (IFMSA), which links future doctors from all over the world.

We were introduced to the term Global Health for the first time when we joined the *"Equal Opportunities for Health: action for development"* project, considering it a broader concept of health. At that time we also noticed that Global Health issues were increasingly part of the agenda of IFMSA General Assemblies – the Federation's most important meetings – and becoming a subject of growing interest.

### HOW DO YOU PLAN TO APPROACH THESE ISSUES WITHIN YOUR STUDENTS' ASSOCIATION?

We thought it would be hard to encourage other students to take an interest in Global Health. For many years there was no room for debate on global problems within IFMSA-Poland and Poland in general, since we had to concentrate on our own national problems. Over the last year there seems to have been a change in the Polish economic system and our interests have begun to extend

far beyond the Polish borders. Our attention is now being drawn to the question of international aid. However, the global health question is still not well represented in Polish faculties of medicine and students tend to underestimate aspects of international health that do not figure on the curriculum, laying the onus on clinical knowledge.

Our main challenge is to convince other students that global health education and an understanding of the complexity of the processes influencing world health have now become essential aspects of medical teaching.

### WHAT HAS BEEN DONE SO FAR IN THIS FIELD?

There are 12 medical schools in Poland, making it crucial to find a "national coordinator of the Global Health project" within IFMSA-Poland who can organise the work of the local branches. The project was presented at the national meeting of IFMSA-Poland and project material was distributed.

On 30 May, in Poznan, Mike Rowson of the Centre for International Health and Development of University College London, held an open lecture and workshop on Global Health which medical students from the whole of Poland were invited to attend.

### CONCLUSIONS

The interview highlights a series of recurring patterns in the history of Global Health. On the one hand, the ever growing need among medical students to think and act globally, making knowledge of the deeper political and economic meaning of the word "health" an essential part of their training; on the other hand, the difficulties encountered in incorporating global health into the standard university curriculum.

Both Italy and Poland have applied a bottom-up approach, starting from students.

The reason for this interview was to see how other countries with different political, economic and social backgrounds from our own, were getting involved in this vital project. It was extraordinary to see that, despite a slower start related to internal problems, the Poles were working in a very similar way to our own.





## TRAINING NEW DOCTORS

Considerations of a young Polish student who wants to be prepared for facing the challenges of a global world, also in health care in Europe.

TEXT BY / DAGNA CHWARŚCIANEK / IFMSA POLAND

The world is becoming more and more interconnected. Increases in the flow of people, products, services and information are starting to have a major impact on the world's health delivery, rendering health-policy makers (many with medical degrees) responsible for the world's health and its inequalities. I therefore believe that, in the times we live in, global health education is an important component that should not be missing from the teaching programs of medical schools worldwide. In my opinion, global health education among medical students should include such elements as: social determinants of health, tropical diseases, global epidemiology, emerging infectious diseases, international public health, global health economics and cross-cultural interactions. Understanding the role of social determinants of health may help doctors working not only in developing countries, but also in developed countries – to better address the needs of people who are medically underserved on account of their difficult life situations. The constant increase in travel and migration have led to the frequent occurrence of diseases endemic to other world regions, in patients from different ethnic groups, with different cultural habits. As a future physician I would like to be able to anticipate such situations, through appropriate knowledge on tropical diseases and the correct cultural approach. Furthermore, like many medical students, I would like to practice medicine in a developing country – either as a student volunteer or after graduation. At present I can only imagine how such an experience would enrich my personal and clinical skills, increase my sensitivity and, alongside knowledge gained on global health issues could, I believe, make me a globally conscious, well prepared physician.

They, too, aim to make Global Health known to and recognized by all nations, laying the foundations for a movement capable of taking robust action in the near future.

This ambitious objective can only be achieved by appropriately teaching trainee doctors (the future key players destined to operate in settings that pose more complex problems than ever before) to realize that Global Health is a responsibility. Things can change but we all need to act.

**MAP 1 / DOCTORS WITH AFRICA CUAMM COLLABORATIONS WITH ITALIAN AND EUROPEAN UNIVERSITIES.**





## THE HEALTHCARE SYSTEM IN BULGARIA

Despite indicators of population health have improved in recent years, Bulgaria continues to be among the countries of the European Union in the queue to health. In May 2012, according to the Euro Health Consumer Index, it was the second lowest among 34 countries and in the last place for the health performance.

TEXT BY / ANGELIKA VELKOVA AND ANNIE ANTONOVA / FACULTY OF PUBLIC HEALTH, MEDICAL UNIVERSITY - PLEVEN, BULGARIA

### THE COUNTRY

Bulgaria is a South East European country with 7.3 million population with a high rate of population ageing. Life expectancy is 70 years for men and 77 for women. Infant mortality has reached the lowest ever rate of 8.5 per 1,000 live births in 2011. Premature mortality (before age of 65) remains among the highest in the EU countries and is 23.3% of total mortality. Total health expenditure is estimated to be 6.9% of GDP.

### HEALTH CARE REFORM

During the period of socio-economic transition Bulgaria has been undertaking profound changes in the healthcare system in order to achieve better access to health services, improvement of population health and quality of care, restructuring of healthcare provision, better working conditions and remuneration for health professionals.

As most of the Central and East European countries did, Bulgaria also changed the healthcare system from Semashko's model to an insurance-based financing system in the late 1990's. A National Health Insurance Fund (NHIF) was established and compulsory health insurance was set up for the entire population in 1999.

Public spending on health is about 4% of Gross Domestic Product. During the last decade there is a tendency towards reduction of the state financing. Health care provision is financed mainly by the National Health Insurance Fund. Monthly health insurance payment is deducted from the personal income and is based on the principles of justice and solidarity. The personal contribution of employees was initially set at 6% of the income and was increased to 8% in 2010, shared between the employer and the insured in 60:40 ratio. Regional branches of the NHIF are responsible for contracting and financing health services providers. Ministry of health provides direct funding to emergency health services, blood transfusion centres, psychiatric and psychiatric hospitals and establishments for medical and social care. It also finances the national preventive programmes and schemes.

Voluntary health insurance funds also operate but their share of healthcare spending stays at 1-1.5%. Recently new rules govern-

ing voluntary health insurance have been introduced to ensure compliance with EU insurance law.

Out of pocket payments on health constitute around 20% of total health expenditure and the local government level of payment is considered as very low.

### HEALTH SERVICES

Health system reform has positioned primary health care at the core of the system and established a new role for the primary care physicians. General practitioners act as main providers of health services and they refer patients to specialists when is needed. GPs provide integrated preventive and curative care. They are paid by the NHIF on per capita basis and for some preventive services. Direct access without referral to specialized medical care is possible to pediatricians, obstetricians and to dentists as well. Specialists are available in outpatient centers and private practices and they are paid for the services by the NHIF or by the patients in case of no referral. Hospital admissions are based on a referral by the general practitioner or emergency centers. Patients have free access to any hospital of their choice. Hospitals are funded on fee-for service basis for the completion of clinical pathways.

The new healthcare system was expected to facilitate the rights of free access to services and free choice of health care provider, to stimulate improvement of quality of care, competition between health organizations and to prompt people to choose healthier life style and preventive behavior. Twelve years later, the national health system still has numerous problems to solve and lacks effective reform. Although the indicators of population health have improved during the recent years, Bulgaria keeps unfavorable positions in all health rankings among the countries of the European Union. In May 2012 the Euro Health Consumer Index of Bulgaria was the second lowest among 34 European countries and Bulgaria was claimed to have the worse healthcare system performance in the European Union.

The health system has been severely underfinanced for a long period. About 2 million Bulgarians do not pay their health insurance contributions, with main proportion of Roma population, permanently unemployed and other underprivileged groups. Taking into account that Bulgaria has the lowest income per capita (together



## NETWORK FOR GLOBAL HEALTH

A Bulgarian network on Global Health was born on 8th September 2011. The twenty-five organizations involved have one goal: to spread and consolidate health for all.

TEXT BY / ANGELIKA VELKOVA / MEDICAL UNIVERSITY - PLEVEN, BULGARIA

The health community should be better equipped to adequately respond to the emerging challenges that it increasingly has to face. These are related to the multicultural nature of modern societies, the increasing presence in EU countries of migrants and economic and political refugees, the growing popularity of international tourism and the effects on health of global demographic, environmental, technological and socio-economic inequalities. Health professionals are also frequently involved in international health cooperation activities, which require adequate, up-dated skills, competences and sensitivity. To achieve the social goal for more equitable health, an improvement of public understanding and raising awareness on development issues and on the global interdependencies in health is strongly required. Public awareness is needed to better mobilize and motivate the society to support the policies on development and global health, thus encouraging a change of attitude towards development issues as well as better understanding of global interdependences, calling for a global commitment and involvement of all sectors of society.

Bulgaria as a new member state of EU has to adopt and further develop educational and other policies and practices in increasing the awareness of medical and health professional and public awareness of global health. Medical University-Pleven is a partner in the project "Equal opportunities for health: action for development" from Bulgarian side.

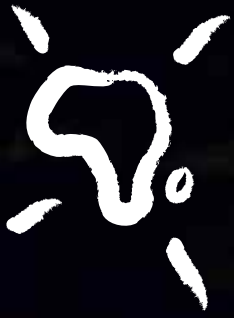
The most important project activity in Bulgaria was the establishment of Bulgarian National Global Health Network on 8th September 2011, that was established by 25 public, academic and professional organizations, health institutions and NGOs from different regions of the country. The Network will contribute to the development and validation of effective practices in the graduate and postgraduate education of health professionals in global health and will act as an engine for national awareness of the Bulgarian society in the field of global health and development. It will provide specialized training in global health for health professionals to facilitate further training in the system of universities, professional organizations and medical institutions.

with Romania) among EU countries, it is clear that its health care expenditure is also behind the levels of other EU members. Out-of-pocket payments are widespread among Bulgarians in order to gain access to better quality outpatient and hospital services. The vast proportion of uninsured people raises also questions about the access to health care. Rural inhabitants and especially the elderly have limited access to specialists and diagnostic services. General practitioners were not prepared sufficiently to play the central role in the system and to provide all range of services defined in the basic package paid by the NHIF. Preventive programmes for adult population have a limited coverage of about 30% of the target groups. Hospital care faces severe problems with funding and staff. Bad working conditions and underpayment of health personnel in the public health establishments causes migration of highly qualified medical and health care professionals to the private sector and abroad, jeopardizing the quality of health care in the country. Majority of Bulgarian patients (75%) is convinced that the national healthcare system is not functioning properly and that effective reforms are necessary. Concerning the priorities for change the first one is to provide much more funding for health care from different sources and the second – to improve the management of available resources. Bulgarian healthcare system still has a long way to go in order to meet the European health care standards and to contribute effectively to the improvement of population health.

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#### **ELECTIONS IN SIERRA LEONE**

The elections of November 17<sup>th</sup>, confirmed the outgoing President, Ernest Bai Koroma, who was elected with 57% of the votes. Despite fears pre-election, the vote took place in a peaceful and serene atmosphere. People occurred in mass to the polls since the dawn (so much so that they are then seats were semi-deserted from lunch until the end of the five). The invitations to the serenity come from the two major parties, the People's Congress (APC) and the Sierra Leone People's Party (SLPP), have been met and the violence has been sporadic.









## EXPERIENCES FROM THE FIELD

### “FRUGAL” TECHNOLOGIES FOR GLOBAL HEALTH

An article published in *The Lancet* by a qualified and nurtured committee of experts puts the spotlight on the theme of technologies for Global health. Keyword: frugality.

This is an attitude that anyone who has experienced the health services of the poorest countries has already learned.

TEXT BY / MASSIMO LA RAJA / LOCAL HEALTH UNIT ULSS 5 OVEST VICENTINO, VOLUNTEER OF DOCTORS WITH AFRICA CUAMM

The world's most prestigious medical-scientific journal, *The Lancet*, recently devoted an extensive article to “Technologies for global health” (29 pages, including references), drawn up by a large commission of experts at Imperial College London<sup>1</sup>. The incipit was nothing new: “Availability of health technology is inversely related to health need”. Providing strategies and examples, the authors used the remaining 28 pages to propose a different model from the one adopted throughout the 20<sup>th</sup> century. Over the years we have witnessed a growing concentration of new technologies for health, from flushing toilets to magnetic resonance, distributed solely in settings with a high intensity of human, material and economic resources.

Conversely, the majority of these recent health innovations, be they large or small, recent or longer standing, are neither readily available nor usable in most poorer settings, home to most of the world's population, who would benefit more. The underlying reasons are many: their cost, complexity and problems of procurement and maintenance.

In a recent article in the present journal, we rather presumptuously coined the term, “health technology gap”<sup>2</sup> which, as health providers, concerned us rather more than the digital gap between rich and poor countries, high on the agenda of many international agencies. The “digital gap” has since rapidly narrowed thanks to the wide spread of digital telecommunications networks, i.e. the latest versions of mobile telephones. These have penetrated “very poor” markets, progressively providing advanced online technology to billions of people who would otherwise be excluded from the bulk of the benefits of “modern-day living”. This has occurred – news item number two – as a result of vast private for-profit investments, clashing with the idea that the “third world” is culturally refractory to innovation and passive to “virtuous” market dynamics.

Furthermore, the constant, sustained growth of all “second and third world” countries has lately been hampering the western world's “infinite growth” model. Growth within the same countries is far from equitable and poses the problem of polarization of global resources on a local scale. Within the health sector, this “dual” socio-economic development is reflected by the opening of increasing numbers of private clinics in urban areas, offering highly sophisticated services, expertise and equipment, available only to a minority of residents. The same clinics border (with adequate protection) on the enormous slums of the urban periphery of low-income countries, with their limited, substandard

healthcare services and infrastructures (water supplies, sewage, waste disposal), where available.

Equipment has not been made available to the “average” public and not-for-profit healthcare unit at the same rapid speed as ICT technologies. Pre-existing availability, procurement and maintenance problems remain; when available and properly functioning, health technologies are not always used appropriately and correctly, and most are neither new nor sophisticated.

However, in a post-ideological era, relying on assurances, hopes or preconceived pessimism is a risky business. The authors of *The Lancet* paper, with Peter Howitt as first author, agreed to explore this plural but dynamic world, where the authoritative opinions of the experts of Imperial College matter less and less.

The essay provides a long, detailed, rational list of emerging, new and re-emerging technologies for health, including drugs, vaccines and clinical protocols, that have reached, or have all the necessary requisites for reaching, the majority of people who can benefit from them. Special attention is devoted to methodologies and tools – not many to be honest – conceived or adopted by workers in poor countries who, while going against the flow, have provided the gold standard in richer countries, as the Ponseti method to correct the club foot.

Returning to the digital telecommunications boom, *The Lancet* paper devotes an entire appendix (only available in the digital version) to the entirely new field of m-Health (mobile health technologies). m-Health refers to a range of applications and accessories used in the latest smartphones to support health practice. Although very recent, they are already widespread. For instance, accessories are already available to obtain and interpret electrocardiograms and cardiocographs, microphotography, pulse oximetry<sup>3</sup> and ultrasonography, in addition to a vast number of software applications for collecting and handling health data and for managing clinical patients. These peripherals and apps are also designed to perform and read low-cost tests in extreme conditions and to transmit files for telematic second opinion consultation in real time.

The advent of “disposable” electronic technologies (who can repair a smartphone?) built of microchips, electronic cards, software and, in the laboratory sector, of sealed kits of consumables, has changed the face of technology, whose adoption had previously been undermined. The world's periphery does in fact lack highly specialized, 24-hour service provision and rapid spare-part supplies, without which fifty percent of biomedical equip-

ment ceases to function, even in our hospitals. This is typically the case in Africa.

Clearly, only a further fall in prices, thanks to the workforces of middle- and low-income countries and to the radical simplification of component part management – e.g. m-Health or innovative tools such as GeneXpert – will enable new biomedical technologies to be adopted and replaced when they break down, even in remote settings with very limited resources.

The key message of this commendable work by experts from Imperial College is that, irrespective of scope or complexity, to be useful and to positively impact health, technology must respond to perceived needs in a way that is understandable, manageable with locally available resources (personnel and infrastructures) and, last but not least, economically sustainable. In a nutshell, technology must be developed “with” and not only “for” workers and users in poorer countries. Until recently, this concept was referred to as appropriate technology. Over the course of 29 pages, Howitt and colleagues have endeavoured to demonstrate that this new, or age old, form of technological development can best be described as “frugal”, ushering in a new chapter of “*frugal*” health technologies. Anyone privileged enough to experience healthcare services in Africa in recent decades has seen that, while technological innovation has been slow and needs remain high, several systems, methodologies, protocols and drugs definable as both “frugal” and effective have been available for years. One example is the manual vacuum extractor: a tool used in childbirth in the last century. Unfortunately, adequately sterilized, perfectly functioning, fully-equipped extractors cannot always be taken for granted in Africa; even less predictable are the

appropriateness, timeliness and correctness with which they are used during the delivery.

However, all agree with Howitt et al on the need to abandon the ivory tower, go out into the field and learn from success stories in technological innovation in resource-poor settings. This would reveal that in many cases, unlike the mobile phone scenario, the innovation process has no short cuts but is the outcome of long-term, often obstinate commitment by providers whose skill, patience and credibility has helped to lay the roots of new knowledge, behaviours and practices. During the course of these “success” stories, the innovators have probably also changed a little alongside the “recipients”, reaching the end of their journey a little older but, in return, getting more out of it than they put in. Howitt ends with an appeal for more investment in frugal technologies (which might be better described as intermediate). It is doubtful that this will bypass market dynamics i.e. the outlook will not be one of short-medium term frugality and companies will invest in this sector sure to make a profit.

The flushing toilet has failed and Bill Gates, in his capacity as a philanthropist, is spending millions of dollars to award the patent for the global toilet of the third millennium. If this is the right way forward, and we have our doubts, we will be enlightened in the years to come.

To conclude, the poor are capable of being frugal without our teaching them. So it is up to us to go back to what Zanotelli called, “the school of the poor”, to determine which tools to use to improve the quality and expectancy of all our lives in the coming decades. It is comforting to think that we share this thought with the Commission of Imperial College London.

## NOTES

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## EXPERIENCES FROM THE FIELD

### SIERRA LEONE

Started in 2011, the intervention of Doctors with Africa Cuamm in Sierra Leone aims at strengthening the hospital and the health system.

In this article, we present the first data that show a picture of the context and present the results obtained after a few months of work in the country.

TEXT BY / SERENA BRUSAMENTO / DOCTORS WITH AFRICA CUAMM

#### THE SETTING

Sierra Leone is a small western African country with a population of approximately 6 million inhabitants, which experienced a devastating civil war starting in 1991 and causing 50,000 deaths. Assessed by the United Nations to be one of the world's least developed countries, it ranked 180<sup>th</sup> out of 187 countries<sup>1</sup> in the 2011 *Human Development Index*. According to world statistics, the country has the highest mortality among children aged under 1 year (114 per 1,000 live births), is fourth for child mortality (174 per 1,000 live births) and third for maternal mortality (890 per 100,000)<sup>2</sup>.

In 2007, a mother and child health policy was implemented in the country, followed by a strategic health sector plan in 2010<sup>3</sup>.

The objective of both programmes is to improve access to and thus equity in quality health services, particularly those relating to safe motherhood. Moreover, a free healthcare scheme (*Free Care*)<sup>4</sup> was launched in 2010, guaranteeing free healthcare services for all children under 5 years of age, pregnant women and breast-feeding mothers.

Despite these policies, Sierra Leone is still far from even only partially achieving Millennium Development Goals nos. 4 and 5. The main obstacles are: lack of qualified healthcare staff, lack of mana-

MAP 1 / SIERRA LEONE WITH THE DISTRICT OF PUJEHUN



gerial skills, inadequate infrastructures and an inefficient drug and consumable procurement system.

The health staff situation is particularly serious. Numerous doctors who fled the country during the war have not returned. Over 80% of those present and almost 50% of the nurses available in Sierra Leone work in the capital, Freetown. In the rest of the country there is one doctor per 100,000 inhabitants and one nurse per 7,500. A new professional figure has been created to respond to this lack of healthcare staff, namely the "MCH aid" (*Mother and child health assistant*). These basic workers are trained at the district level with a view to employing them in the same areas after an 18-month traineeship.

#### THE INTERVENTION OF DOCTORS WITH AFRICA CUAMM

At the beginning of 2012, Doctors with Africa Cuamm started a project in Sierra Leone, with the support of Unicef, in the rural district of Pujehun, whose population of just under 300,000 inhabitants is one of the least served of the country. The aim is to improve access to, use and quality of maternal, neonatal and child services in the district. The intervention is designed to support the hospital and six peripheral health centres. The strategy being pursued is based on a WHO proposal recommending that hospitals should be able to deliver all emergency obstetric and neonatal services (*Comprehensive Emergency Obstetric Care-CEmOC*)<sup>5</sup>. It also indicates that, according to population size, there should be at least three peripheral health centres capable of managing most emergencies originating directly in the community, related to pregnancy, delivery and the post partum period, affecting either mother or child (*Basic emergency obstetric care-BEmOC*), and be able to refer cases requiring a caesarean section or transfusion to hospital at any time. Until the end of 2011, this integrated service system was not functioning in the district.

#### PROBLEMS TO ADDRESS

Pujehun hospital has two main complexes, one dedicated to adults and one new one built in 2010, housing a maternity wing, an operating room and a paediatric ward. Baseline conditions were far more fragile than expected and there were major structural limits. A prime



example was the operating room, rendered unusable by lack of regular water and power supplies. The healthcare staff were grossly undertrained, a situation worsened by high absenteeism. Financial management was chaotic and inefficient. Hospital income was based on a service-related financing system. The hospital was intended to be run, from the supply of instruments and drugs to basic cleaning materials, using the funds derived from hospital fees. Inevitably, limited income led to inadequate services across the board and the services actually delivered were poor in quality. Lastly, it was common practice among nurses to sell hospital drugs to supplement their poor, irregular salaries. At the district level, health centres (*BEmONC*) were still being built or rebuilt, while staff provided care in very poor conditions. Besides the lack of power and water, none of the centres had midwives or nurses; patient care and centre organization was managed by the *MCH aid*.

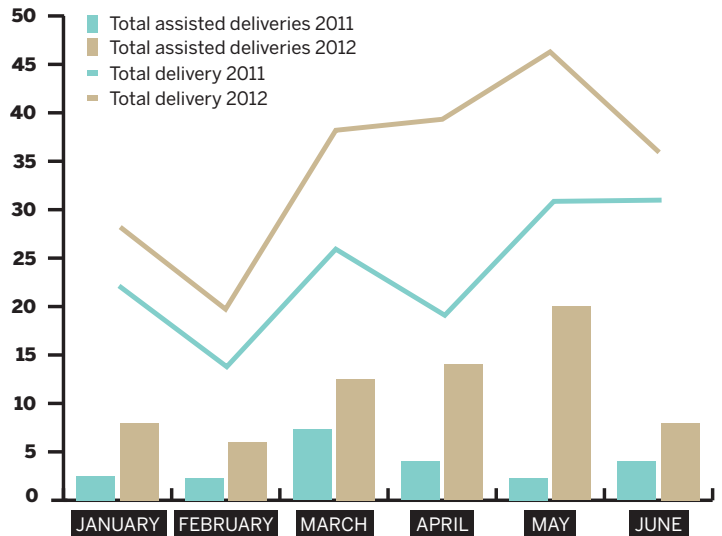
The aim of the Doctors with Africa Cuamm project was to address this completely unstructured setting by strengthening the district healthcare system. On the one hand it has begun to support hospitals through provision of clinical care and health staff training, and on the other, it has implemented a process to improve primary care by bolstering district and human resources management. This is a new approach and style for Sierra Leone, where NGOs generally work with vertical projects or manage their own services.

## PRELIMINARY RESULTS

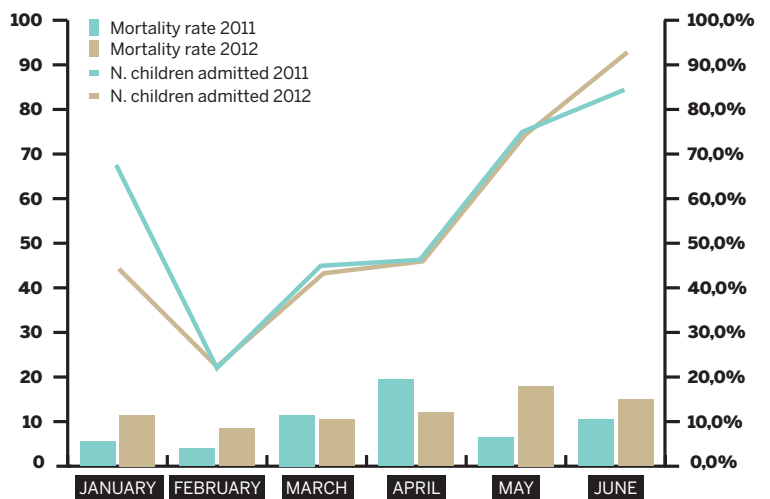
One year after starting work, a number of significant results have been achieved: the maternity and paediatric wards have become fully operative and the operating room is now functioning. Volunteers who are unpaid but supported by on-the-job training, have been used to integrate the work of nurses. The constant presence of doctors has gained the confidence of the local community, leading to an increase in the number of admitted and treated patients. Utilization data are on the rise, albeit gradually. Admissions to the maternity ward increased by 38% in the first half of 2012 compared to the same period of 2011 (246 pregnant women in the first half of 2011, 339 in 2012). There were 143 child deliveries in the first half of 2011, of which 15% were assisted and 13% were caesarean sections. In the first half of the following year, deliveries increased to 206 (a 44% rise), of which 33% were assisted and 21% caesarean sections, as illustrated in **Figure 1**. Deaths directly due to obstetric causes fell from 2.8% (standard deviation – SD - 32%) in 2011 to 1.9% (SD 1.9%) in 2012. Conversely, however, the number of stillbirths rose from 8.6% in 2011 to 14.4% in 2012. The hospital is the only place in the entire district where caesarean sections are performed. The percentage of caesareans out of the total number of expected deliveries in the district increased from a mean of 0.5% in the first half of 2011 to 1.1% in the same period of 2012 (WHO standard between 5 and 15%).

**Figure 2** shows comparative data for the paediatric ward between the first half of 2011 and the same period of 2012. The number of patients accessing the hospital, with seasonal variations, reached higher

**FIGURE 1 / TOTAL NUMBER OF DELIVERIES AND ASSISTED DELIVERIES DURING THE FIRST HALF OF 2011 AND THE SAME PERIOD OF 2012**



**FIGURE 2 / PAEDIATRIC WARD: NUMBER OF ADMISSIONS AND MORTALITY RATES RECORDED DURING THE FIRST HALF OF 2011 AND THE FIRST HALF OF 2012**



peaks during the rainy season, but did not exhibit significant differences between 2011 and 2012. The graph shows that monthly mortality, in the two periods, appears to have slightly increased. This rise is probably due to better quality of data recording. Efforts were in fact made to improve this in the early months of the project, since the 2011 registry clearly showed that deaths were underestimated and diagnoses were not formulated according to international criteria.

**Table 1** shows the distribution of causes of death in children admitted to the paediatric ward in the first half of 2012. The leading cause of death was malaria, followed by malnutrition, pneumonia and sep-

**TABLE 1 / DISTRIBUTION OF CAUSES AND TIMES OF DEATH IN THE PAEDIATRIC WARD IN THE FIRST HALF OF 2012**

COD	NUMBER OF DEATHS	PROPORTION OF DEATHS OCCURRING WITHIN 48 HOURS OF ADMISSION
SEVERE MALARIA	25	96%
MALNUTRITION	4	25%
PNEUMONIA	3	67%
SEPSIS	3	67%
INTOXICATION	2	100%
TYPHOID	2	100%
ANAPHYLACTIC SHOCK	1	100%
ANAEMIA	1	0%
BURN	1	100%
DEHYDRATION	1	100%
LASSA FEVER	1	100%
<b>TOTAL</b>	<b>44</b>	<b>84%</b>

sis. 84% of the deaths occurred within 48 hours of admission, due more to the lack of effective care in the community or peripheral health centre than to the quality of hospital care. Lastly, it should be stressed that malaria accounted for over 50% of causes of death. Accordingly, efforts must be made to establish the real availability of mosquito nets and antimalarial drugs at the community level.

The objectives and initial results of the project were presented to the representatives of the Ministry of Health, the district administrative and health authorities, and local community leaders in a seminar held at the town hall of Pujehun, during 2012. It was an opportunity to highlight the limits of the healthcare system to the authorities and to give the community a voice. The meeting drew the attention of the Minister of Health to the lack of resources and poor hospital management and led to the transfer of new nurses. A limited number of these were, however, discouraged by the distance to and isolation of the district. Another effect of this meeting was to promote greater financial support for the hospital and the start of greater, more transparent administrative control.

To conclude, the challenge to guarantee access to quality mother and child services to the population of Pujehun remains very high and depends in part on management capacity building at the hospital and in part on more efficient prevention and treatment services at the peripheral level. Here it will be essential to involve the community in supporting and controlling community healthcare agents.

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## A CLOSER LOOK

# THE EFFECT OF AN INTEGRATED MULTISECTOR MODEL

A research published on *Lancet* shows the positive outcomes that can be achieved through an integrated multisector model and a small budget; in particular it points out positive results regarding the decrease of children mortality, according to Millennium Development Goals.

TEXT BY / DONATA DALLA RIVA / DOCTORS WITH AFRICA CUAMM PROJECT OFFICE

An interesting article by Paul Pronyk et al. was published in *The Lancet* in July 2012, presenting the results achieved by the “Millennium Villages Project” in terms of reducing the mortality rate of children under 5 years of age<sup>1</sup>.

The programme started following the United Nations Summit of September 2000, at which the heads of state adopted the Millennium Development Goals<sup>2</sup>. The ten-year project, commissioned by the United Nations Secretary General and led by the *Earth Institute of Colombia University*, the *United Nations Development Programme* and an NGO, is based on a series of individually effective interventions, in nine rural villages in Sub-Saharan Africa (Nigeria, Mali, Senegal, Ghana, Uganda, Kenya, Rwanda, Tanzania and Malawi)<sup>3</sup>. Last 29<sup>th</sup> August, the decision was announced to add another rural village in northern Ghana<sup>4</sup>. Individual intervention packages were simultaneously adopted in each village across the fields of agriculture, environment, business development, education, infrastructure and health. The study analysed the project results after three years, comparing indicators measured pre- and post intervention in each village, and comparing values with the same indicators in matched comparison villages where the programme was not implemented.

Total spending per capita was \$116, of which \$25 were specifically allocated to health. Spending was lower than initially estimated (\$120 per capita, of which \$40 for healthcare).

The mortality rate of children under 5 years fell by 22% compared to baseline levels and by 32% relative to the control villages. Significant improvements were reported in the “poverty” status of families (from 41% to 60.3%), and in access to drinking water (from 12.7% to 77.4%) and better sanitation (from 1.9% to 28.6%); there was a decrease in levels of food insecurity (from 68.6% to 40.1%) and in the number of stunted children (i.e. with chronic malnutrition) (from 36% to 28.2%).

The study yielded major improvements in the health sector, with increases in immunisation coverage (from 72.9% to 92%), access to skilled child delivery care (from 32.6% to 57.2%), the percentage of postnatal checks for neonates (from 6.9% to 14.3%), the number of antenatal HIV tests (from 28.8% to 70.1%), and in the use of malaria bed nets (from 7.6% to 43.2%). The prevalence of malaria fell from 18.8% to 2.7% and of diarrhoea from 19.5% to 16.4%. Conversely, the percentage of pregnant women receiving antenatal care, and of children under 2 years of age with underweight status or wasting<sup>5</sup>, remained unchanged.

Although the study was not designed to explore child mortality trends, findings suggest that the periods that contribute most to reducing mortality rates in children under five years of age are the first month of life and the period between 6 and 23 months. To conclude, the study shows that adoption of an integrated multisector approach and a relatively “modest” additional budget allocation per capita can greatly contribute to achieving the Millennium Development Goals. Moreover, the health sector budget is actually in line with current allocations in the countries taking part in the study (\$43 per capita).

Although there is debate about the generalisability of this type of intervention and the sustainability of the results once the project has ended (the programme relies heavily on external support that does not promote real changes to the system and may even encourage passive acceptance of aid), important results have been achieved. Findings confirm, above all, the intersectoral nature of development and demonstrate the effectiveness of the integrated approach. Further, major results can be achieved by allotting a budget relatively close to the average amounts currently allocated in the surveyed countries (\$43 per capita for health, including the combined contribution of governments and development partners). This should be cause for critical reflection, among sub-Saharan African governments and the “donor community”, on the efficacy of resource allocation and implementation.

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## REVIEW

# AN ANTI-MALARIA VACCINE JUST AROUND THE CORNER

The first vaccine against malaria, *Plasmodium Falciparum* (RTS,S/AS01), should become available in three years' time. What does this vaccine mean for the future control and eradication of malaria? How can investments in the new vaccine be sustained in the midst of the current global recession?

TESTO DI / SILVIO DONÀ / MEDICI CON L'AFRICA CUAMM

The first vaccine against malaria<sup>1</sup>, *Plasmodium Falciparum* (RTS,S/AS01), should become available in a little over three years' time. WHO has announced its intention to distribute it as from 2015, after completion of the ongoing phase III trial. The vaccine has been developed as part of a public-private partnership between GlaxoSmithKline and the "Path Malaria Vaccine Initiative" programme backed by the Bill & Melinda Gates Foundation.

RTS,S/AS01 is a hybrid formed by fusing the hepatitis B surface antigen with part of the circumsporozoite protein (the protein sheath of the sporozoite, i.e. the parasite stage inoculated by the mosquito, which subsequently invades the liver cells before entering circulation). The vaccine's immunogenicity is related to its polymeric nature and the AS01 adjuvant.

The work in question<sup>2</sup> is the interim report on phase III of a large multicentre trial (15,460 children enrolled; two age groups: 6-12 weeks and 5-17 months), describing the efficacy of the vaccine in the first 6,000 (out of 8,923) older children and assessing the first 250 cases of severe malaria.

It is not common scientific practice to publish the results of a trial when its efficacy findings are still incomplete, suggesting that political and business pressure have probably been brought to bear. The ideal target population for this vaccine are younger children, aged 6-12 weeks, who could probably receive it as part of routine immunisation. The efficacy findings in this subgroup are not yet available. When they are, they will be short-term results, which are not sufficient to evaluate the vaccine's real impact. Some observers maintain that early publication was a political choice: the results were presented at the malaria forum, held by the Bill & Melinda Gates Foundation, which announced the potential future eradication of the disease back in 2007<sup>3</sup>.

Interim results essentially corroborate the phase II findings<sup>4-6</sup>:

the vaccine ensures 55% protection (an unacceptable percentage from a western perspective, but which would be a major result in the African context).

However, the study reported a significantly higher percentage of cases of meningitis among the immunised than among the controls. While there seems to be no plausible explanation for this and it may prove to be chance, it cannot be dismissed. There may actually be a higher risk of contracting fever or seizures among those vaccinated with RTS,S/AS01, reflecting the irritative potential of this highly immunogenic vaccine. Such doubts give grounds for a phase IV trial on safety and efficacy, and prompt the need for active surveillance once the vaccine has been put into circulation.

One question that remains unanswered concerns the duration of immune coverage: assessment of the efficacy of a booster dose, at 18 months, will not be available until 2014. The cost of the vaccine is not known either. All these factors are essential in evaluating cost-effectiveness, which is the basis for future health policy decision-making at both global and national level.

What does this vaccine mean for the future control and eradication of malaria? The considerable rise in global funding is producing tangible results in the fight against the disease. Where effective interventions have been implemented (insecticide-treated bed nets, environmental drainage, the spread of artemisinin derivatives), rates of malaria morbidity and mortality are decreasing. The low malaria mortality reported in the study (only 10 deaths) confirms the benefits of early diagnosis and effective treatment. How can investments in the new vaccine be sustained in the midst of the current global recession and with the lower "political pressure" that will inevitably result from the fall in malaria mortality rates?

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# UNIVERSAL HEALTH COVERAGE. THE CASE OF MEXICO

While consolidated welfare systems and national health services are subject to drastic cuts, universal health coverage is gaining popularity among the “emerging” countries. This is the case of Mexico, but it is not alone.

TEXT BY / GAVINO MACIOCCO / DEPARTMENT OF PUBLIC HEALTH, UNIVERSITY OF FLORENCE

2012 is a very important date in the history of Mexican health and for the nation as a whole: it was the year universal health coverage was achieved<sup>1</sup>. Nine years previously, in 2003, half the Mexican population (over 50 million people, mainly with low incomes) were without insurance coverage and, in the event of illness, were exposed to catastrophic expenses or forced to go without treatment due to lack of money.

The health reform behind this trend dates back to 2003 (coming into force on 1<sup>st</sup> January, 2004) and was based on the introduction of popular health insurance, as part of a programme entitled *Seguro Popular*. The scheme offers free access to a package of essential healthcare services, designed for those with no health cover: the self-employed, unemployed and all those without a proper, regular job. Enrolment is voluntary. The *Seguro Popular* is funded by federal taxation, state funding and income-related family contributions, net of food expenses and limited to a maximum ceiling of 5% of household income (the most destitute families are exempt from any contribution).

The package of services guaranteed by *Seguro Popular* has been progressively extended and updated each year according to established priorities, bearing in mind epidemiological profile, technological development and resource availability. In 2004, the number of affiliates of *Seguro Popular* were just over 5 million, rising to approximately 20 million in 2007, and to 52.6 million in April 2012. The package of services has also been considerably extended, increasing from 85 services in 2004 to 472 in 2012. A series of preventive interventions has recently been introduced addressed specifically to health promotion in the field of chronic diseases.

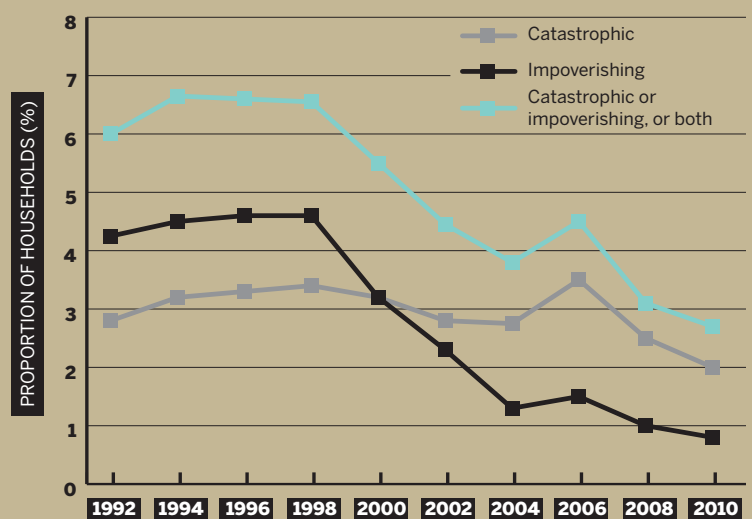
The services for affiliates of *Seguro Popular* are chiefly provided by public facilities. Investment plans for infrastructure, technologies and human resources have been developed to improve the quality of public health services and procedures drawn up for their accreditation. Between 2001 and 2011, 12 highly specialist cen-

tres, 200 hospitals and 2000 health centres were built. This has been accompanied by considerable growth in the number of doctors and nurses and has increased usage of public facilities. For example, the percentage of deliveries in public maternity wards has risen from 32% in 2003 to 48% in 2012.

Consequently, healthcare expenditure has progressively increased: as a percentage of GDP (from 5.1% in 2000 to 6.3% in 2010), as total per capita healthcare expenditure (from 508 to 959 dollars), and as per capita public health expenditure (from 237 to 469 dollars).

Conversely, there has been a decline in the percentage of families exposed to catastrophic expenses due to illness and – to a greater extent – in the percentage of families falling below the poverty line owing to medical costs (**Figure 1**)<sup>2</sup>.

FIGURE 1 /



## NOTES

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Established in 1950, Doctors with Africa CUAMM was the first NGO in the healthcare field to receive recognition in Italy (pursuant to the Cooperation law of 1972) and is the largest Italian organization for the promotion and safeguard of the health of the African populations.

It implements long-term development projects, intervening with the same approach in emergency situations, with a view to ensuring quality services that are accessible to all.

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## HISTORY

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In its **60** years' history:

- **1,330** people have departed to work on projects: 367 of these departed on more than one occasion. The total number of departures was therefore 1,908;
- **4,330** years of service have been carried out, with a mean of 3 years per expatriate person;
- **950** students have been accommodated at the college: 640 Italians and 280 from 34 different countries;
- **279** doctors have departed from the Veneto region in almost 60 years;
- **211** hospitals have been served;
- **40** countries have benefited from intervention;
- **150** key programmes have been carried out in cooperation with the Italian Foreign Ministry and various international agencies.

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## IN AFRICA

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Today we are in Angola, Ethiopia, Mozambique, Sierra Leone, Southern Sudan, Tanzania, Uganda with:

- **80 providers:** 47 doctors, 4 paramedics, 29 administrative and logistics staff
- **37 key** cooperation projects and about a hundred minor support interventions, through which the organization assists:
  - 15 hospitals
  - 25 districts (for public healthcare activities, mother-child care, training and in the fight against AIDS, tuberculosis and malaria)
  - 3 motor rehabilitation centres
  - 4 nursing schools
  - 3 universities (in Uganda, Mozambique and Ethiopia).

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## IN EUROPE

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Doctors with Africa CUAMM has for years been actively implementing projects and building networks at European level, with the aim of building public awareness on the subject of equality of access to treatment and healthcare systems. Specifically, from 2011 to 2014 the organization has been coordinator of the European project, "Equal opportunities for health: action for development", on which it has been working with 18 other partner organizations from 7 European countries. Universities, student associations, non governmental associations in Italy, Poland, Latvia, Bulgaria, Romania, Malta and Hungary are working together to give room and voice to training in Global health and to promote greater awareness about the relationships between health and development, both individually and collectively.

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## NEEDY AFRICA

### EVERY YEAR IN SUB-SAHARAN AFRICA:

- 4.5 million children die before reaching five years of age, for preventable diseases that can be treated at low cost;
- 1.2 million newborn children die in the first month of life through lack of treatment;
- 265 thousand women die from pregnancy- and delivery-related problems.





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quarterly magazine  
of international cooperation  
and health politic  
December 2012 — No **65**  
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ACTION FOR DEVELOPMENT



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