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"One health": The potential of closer cooperation between human and animal health in Africa.

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Abstract

Emerging zoonoses affect livestock and humans, which calls for closer cooperation between animal and public health. Conceptually ideal, such cooperation is difficult to achieve and causing agents of outbreaks are often confounded. Lacking awareness may be very likely due lacking capacity and limited resources for diagnosis and surveillance of zoonoses, but also owing to the clinical perspective that focuses on the patients and much less on their surroundings. Consequently governments often neglect zoonotic diseases, reflecting separated sectors of both medicines. The present paper explores the underlying concepts of closer cooperation initially coined as "one medicine" and presents examples of its application and future potential emphasising the African context. Zoonoses are certainly the most prominent example of compulsory interaction between human and animal health. The interaction of humans and animals in Africa is inextricably linked and hence needs a thorough rethinking of institutions, legislations, communication and funding of both sectors. There is a large untapped potential of new institutional and operational models for providing health services jointly to remote populations which is particularly relevant with regard to ongoing health sector reforms and the human resource crisis. Further, there is a potential for innovative, cost-effective approaches to zoonoses control, for which Pan-African networks would be the best justification for setting up a global fund for zoonoses, similar to and/or linked to the Global Fund to fight HIV/AIDS, Tuberculosis and Malaria.

Introduction

Human and veterinary medicine still appear as well separated sectors and entities in most countries. Evidently veterinarians are not allowed by law to treat humans and physicians only rarely treat animals. However, there are many overlapping issues, mostly in the realms of public health and in the control of diseases transmissible between animals and humans (zoonoses). In such cases cooperation between both sectors becomes crucial, e.g. starting from informing each other on the emergence of new diseases and ending in the long term perspectives of integrated control.

The cooperation between two well structured entitites is not very easily achieved as for example revealed in Rift Valley fever outbreaks in humans in Mauritania that where mistakenly identified as Yellow fever. The correct diagnosis only occurred after contacts with the livestock services who observed abortions in livestock due to Rift Valley fever (1). In sub-Saharan Africa, clinicians relate fever mostly to malaria even though an estimated 50-80% of fevers result from other causes (2). In a case study on fever related diseases in Mali, physicians paid attention to potential zoonotic diseases only after veterinarians identified risk factors for the transmission of zoonoses (3). Lacking awareness may be very likely due

lacking capacity and limited resources for diagnosis and surveillance of zoonoses. and - equally important - also owing to the clinical perspective that focuses on patients and less on their surroundings. Consequently, governments often neglect zoonotic diseases. The aim of the present paper is to explore the underlying concepts of closer cooperation between human and animal health initially coined as “one medicine” - and to presents examples of its application and future potential emphasising the African context.

From “one medicine” to “one health” a brief historical background

Ancient healers were priests and cared for both humans and animals (4). They gained anatomical and pathological skills from slaughtering sacrificial animals and deciding on their purity for sacrifice (Leviticus 1,3). Human medicine integrated the medieval universities, whereas veterinary medicine remained largely in the hands of equerries until the 18th century (5). Claude Bourgelat, the founder of the first veterinary school in Lyon (1762) was heavily criticised when he recommended human clinical training for the veterinary curriculum (6). However, in the 19th century, the pioneers of the microbiological revolution and the advent of cellular pathology (e.g. Rudolf Virchow cited in (7)) manifested a strong interest of interlinking human and veterinary medicine as form of comparative medicine based on discovering similar disease causing agents and pathologic patterns in humans and animals. In the 20th century, both sciences specialised to an extent that their association was hardly visible and less often practiced. It was Calvin Schwabes’ thorough rethinking of the concept of “one medicine” in 1976, that fully recognized the close systemic interaction of humans and animals for nutrition, livelihood and health (4). Today, the earliest forms of healing of humans and animals are still widely practised in traditional pastoral societies. It is thus not surprising that the “one medicine” is actually of African origin. It was conceived and conceptually consolidated during Calvin Schwabe’s work with Dinka Pastoralists(8) . It basically means that there is no difference of paradigm between human and veterinary medicine. Both sciences share a common body of knowledge in anatomy, physiology, pathology, on the origins of diseases in all species (4). Later, international organizations such as the WHO and the Food and Agriculture Organization (FAO) institutionalized it partly as Veterinary Public Health (VPH). More recently “ecosystem health” has emerged, seeing sustainable development expressed as the mutualism of the health of humans, animals and the ecosystems in which they co-exist (9) and extending the concept of “one health” to that of the whole ecosystem including wildlife (10-12). Conservationists have recognized, what is known as the “Manhatten principles”(13), that the health and sustainable maintenance of wildlife in natural reserves is mutually interdependent with the health of communities and their livestock surrounding them (14). Finally, many of the causing agents with bioterrorist potential are zoonoses and hence require mutual animal and public health vigilance for rapid detection (15). The “one medicine” hence evolves towards a “one health” concept which reflects the contemporary thinking on health and ecosystems and their relevance for global health development (16).

What does “one health” really mean.

While it is accepted that human and animal health should be much more closely interlinked, the operational strategies still require a substantial re-thinking. To fully exploit synergistic benefits between human and animal health, closer cooperation is required at all levels ranging from international organizations, governments, research and technology, health systems and education.

Governments and international organizations

WHO, FAO and OIE (World Organization for Animal Health) are at the focus of discussion. While they cooperate on zoonotic diseases with transboundary importance such as Avian Influenza (AI), their respective roles and responsibilities are still not fully clarified based on pragmatic considerations of most effective approaches of surveillance and control. Achieving this closer cooperation would provide a strong signal to national governments and all institutions concerned. For example, following the recent outbreaks of AI and RVF in East Africa, many governments have created *ad hoc* task forces between the concerned ministries of agriculture, livestock production and health, also in Ethiopia. Such cooperation between sectors should be formalized and its mode of operation and responsibilities clarified to make it effective not only in response to crises but even much more as tool for risk analysis, prevention and coordinated, integrated control (16). Many other zoonoses like Q-fever(17), Anthrax and rabies (18) are at stake and would rapidly gain the attention required by such cooperations and interlinkages, which should finally also strengthen links within and between African countries (19).

Research, technology and health systems

In many countries zoonotic diseases are not considered as important simply because the diagnostic capacity to detect them is hardly existent. For example, bovine tuberculosis in Chad was not considered important until the first tuberculosis laboratory in the country was able to demonstrate it (20). Joint human and animal surveillance and research on zoonoses accelerates time to detection and the identification of reservoirs (15). Under resource constraints diagnostic facilities could easily be shared (21). Governments often consider the control of zoonoses as too expensive, however, combined societal economic assessments show that their control may actually be highly cost-effective if intervention costs are shared between sectors (22;23). Observations of higher vaccination coverage in cattle than in children in nomadic pastoralists in Chad have led to joint livestock and human vaccination campaigns by inter-sectoral cooperation between the expanded programme of immunisation (EPI) and the veterinary services in Chad (24). Veterinarians are often the only health person in the remote rural areas and would be competent – after some training training - to sell also a limited set of essential human drugs under conditions when pharmacists and pharmacies are lacking (25). Such cross-sector arrangements are certainly more effective and also more ethical than leaving the rural population at the mercy of illegal drug sellers and drug peddlers. Moreover, novel models of integrated social services exploiting linkages of education-public health-animal health-environment (26) could make private veterinary services profitable where they can hardly make a living in a privatised scheme today and would therefore significantly contribute to improved rural health service coverage. Veterinarians would also be instrumental in organizing joint animal human vaccination services (25). Accepting these approaches implies rethinking of new institutional and operational models of joint health services provision which is of particular relevance in view of the current human resource crisis in the health sector (27). Community based surveillance of animal diseases as proposed by OIE at the N'Djamena conference in February 2006 (28) could be extended to public health to accelerate detection of new outbreaks. Current academic and technical curricula should be revised to provide medical doctors with more knowledge of ecological relationships of zoonoses and veterinarians with better knowledge on public health and health systems. Concluding, the major challenge in achieving these inter-linkages lies in effectively

combining the public health, animal health and ecosystem health approaches under a common umbrella for comprehensive public health action.

Vision for the future

Zoonoses and their control are certainly the most prominent example of the need to combine human and animal health. The interaction of humans and animals in Africa is much closer and directly visible e.g. by the breakdown of livestock production due to the HIV epidemic (29) or the livelihood consequences of animals diseases (30). Moreover, we should not forget the past disaster of Rinderpest imported to Ethiopia during colonial rule (4). These inextricable linkages show the need for a thorough rethinking of institutions, legislations, communication and funding of both sectors. There is a large untapped potential of new institutional and operational models for providing health services jointly to remote and/or neglected populations which is of highest relevance within the context of ongoing health sector reform programs and the human resource crisis. Limited laboratory capacity and infrastructure can easily be shared between sectors, and needs no further justification as the pathogens dealt with are the same for humans and animals. The populations concerned in rural and urban areas have specific knowledge about diseases in their surrounding which can be better used for community based surveillance, but also to define priorities for action and the translation of evidence into policy, comparable to the East African REACH consortium with their activities to link research outcomes with political and strategic and decision makers (31). These examples certainly enhance the urgently needed improved communication between sectors and also allow making much better use of non-Western knowledge of "integrated" pastoral societies with their own pragmatic solutions for problem-solving (4).

Concluding, there is a potential for innovative, cost-effective approaches to zoonoses control (23), for which cooperation between the human and animal health sectors should be extended internationally analogous to the concerted approach of rabies control in South America (19). Pan-African networks for zoonoses control would be the best justification for a global fund for zoonoses similar to and/or linked to the Global Fund to fight HIV/AIDS, Tuberculosis and Malaria.

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Rabies

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Despite the odds of working in Chad, the project on rabies control worked very well and showed, after a first study by another group in Tanzania (Lembo *et al.* 2006), that the new direct immuno-histochemical test (dRIT, Biotinyl coupled anti-rabies antibody, streptavidin-peroxidase detection system) of CDC has the same performance as the Immunefluorescence gold standard. The main advantage is that it does not need a fluorescence microscope and thus has a tremendous potential to be extensively used in peripheral field laboratories throughout Africa and Asia.

Confronted with the lack of funds for dog rabies mass vaccination Rolande Mindekem and Salome Dürr could show that willingness to pay for dog rabies vaccination follows empirical observation. While vaccination coverage reaches >70% if dog vaccination is free, it drops to 20% if owners have to pay 4 US$. With routine data for weekly rabid dogs and exposed humans over 6 years, we could fit a dog-human rabies transmission model and show that in N'Djaména there is nearly endemic stable rabies transmission with an $R_0 = 1.05$. One single dog mass vaccination reaching 70% coverage is sufficient to eliminate rabies for at least six years. Culling exercises are much less effective and socially not acceptable. Comparative cost of rabies control by rabies vaccination is cheaper than the "do nothing"alternative of human post-exposure treatment (PET) after 5 years. Comparative cost-effectiveness of dog mass vaccination is cheaper than PET after 4 years and reaches 33 $US/DALY averted after six years.

One of the involved students (Salome Dürr) received the first prize of the young scientist award at the Austrian-German-Swiss epidemiology conference in Oberschleissheim (Sept. 5.-7. 2007). The work on the transmission model is currently extended to an individual based stochastic version in collaboration with Timo Smieszek at ETHZ.

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Brucellosis in Kyrgyzstan

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Livestock production system and risk of brucellosis
The breakdown of the Soviet Union in 90s brought deep reforms such as privatization, market economy and land reforms. The country has a long pastoral tradition with its huge mountain pastures potential. In theory, pasture use in Kyrgyzstan is strictly regulated, including inventories, leasing contracts and user certificates. But in reality unsustainable management prevails in such unclear legal framework where livestock became an easy income source and played a pivotal role underlining the consideration of pastures and livestock in the rural livelihood strategies. Spatial pasture use (near village, intensive pastures, and remote) as well as the temporal pasture use (winter, summer) rapidly stopped due to infrastructure and services breakdown. Thus recovering traditional transhumance implicates a loss of part of living standard.

Following the reforms, the Kyrgyz livestock population has drastically decreased (1) with the increase in winter fodder prices and the fall demand for wool on the international market. However from 1995, the population became stable with the ephemeral condition of livestock production and the good price index of livestock products (milk and meat). In fine the decrease of livestock population and productivity is considerably due to the emergence of livestock disease. On herder's perspective, brucellosis was named as a major limiting factor to flock size, productivity and the development of high quality meat and milk production. On public health perspective, the increase incidence of Brucellosis was due to the collapse of veterinary services and the incapacity of services to adopt appropriate control strategies.

One health into practice
Kyrgyzstan is known to have one of the highest brucellosis incidences worldwide (annual Incidence: >50 per 100 000). An increase of the disease has been reported since the end of Soviet system. The theoretical base for the control of brucellosis exists over 50 years and comprehensive elimination schemes have been successfully operated (Europe) or launched (Mongolia) in many countries. But these schemes cannot be transferred directly to all countries. In general there is very little information on the direct animal-human relationship for brucellosis and a chronic lack of cooperation and information exchange between veterinary and public health sectors as far as the Brucellosis problem is concern.

The transversal package project (TPP-Pastoral production System) within the framework of NCCR North-South, adapted and applied the "one health" approach experienced in Chad and Mongolia to (i) investigate human and animal brucellosis simultaneously by representative field studies and (ii) to tailor brucellosis control to conditions of institutional change and low income conditions.
Epidemiological links with joint assessment of brucellosis prevalence in livestock holders and their animals help for identification of possible sources of exposure of human and for having better insights into transmission pathways which are needed for information and control strategies. Simultaneous assessment of brucellosis will provide evidence for public health and veterinary authorities to start cooperating as no single actor was able to reduce the incidence. The transversal set up was enabled through the network of the NCCR N-S, and catalyzed

through the Swiss tropical institute STI and the Center for Development and Environment of the University of Bern.

Dialog and capacity building

The brucellosis project is a partnership of the Swiss Tropical Institute and the Institute of Livestock, Veterinary Science and Pastures as a case study of the Transversal Partnership Project "Extensive production system" within the Swiss National Centre of Competence in Research North-South, Joint Area of Case Studies Central Asia. The project collaborates closely with the State Republican Central Veterinary Laboratory. The Republican Centre for Quarantine and especially dangerous diseases, the State Sanitary Epidemiological Department of the Kyrgyz Republic and the Swiss Red Cross in Bishkek.

Inter- and trans-disciplinary research approaches were used to assess the cultural preferences of veterinary and public health system and the knowledge of the communities on brucellosis. This knowledge includes risk factors such as raw milk consumption contact with diseased livestock, demand and quality of veterinary services. Dialog between communities, research institutes and health implementers from public health and veterinary sectors have contributed to lay the foundation of a joint brucellosis research project in Kyrgyzstan. This exercise bridges the future recommendation applicability gaps. The potential for information exchange and communication between sectors to clarify responsibilities of the high incidence and for interactions between public health and veterinary authorities will be identified.

The field survey and data collection have been conducted under the supervision of the Institute of livestock pasture and veterinary. The laboratory tests were performed in the decentralised oblast veterinary labs (animal samples) and Department of Quarantine (human samples). The double data entry is conducted after designing the data base (1 person from the Institute and 1 from the Swiss Red Cross). The serum samples from human (n=1800) and animals (5'369: 1'805 cattle, 1'501 goats, 2'042 sheep) were randomly sampled and tested with eight different techniques (Ukraine and OIE (2)standard tests). Four Kyrgyz lab technician were trained on sampling methods, tools and methods of quantitative epidemiology and new brucellosis testing methods. The socio-economy data was also collected from the 1800 households in 3 Oblasts through questionnaires.

While statistical analysis is ongoing, the first results confirm the high prevalence and incidence more than what is reported from administrative data.

Outlook

The planned participatory multi-stakeholder seminar (early June 2008) will define with a consortium of Donors and Ministries, priorities and cost-effective control strategies with delicate political 'enjeux'.

Joint initiative is discussed with ETHZ for a joint programme for the control of Brucella, Echinococcosis, and Rabies. Currently the study is being complemented by culture and molecular characterization and drug susceptibility of the involved Brucella species (B. abortus, B. melitensis). Variable number of tandem repeat (VNTR) and other molecular techniques will be used to demonstrate in particular animal-human transmission. Collected Brucella strains will be further characterized by mass spectrometry (MALDI-TOF) at LS to specify their molecular signature. In a first step, existing primary cultures of animals and possibly humans will be confirmed by culture and molecular characterization. In a second step, the proportion of B. melitensis/B. abortus will be established in human cases. Human cases with proven cultural diagnosis will be traced back to identify potential sources of infection in suspected milk, aborted fetuses in the area of origin of the patient. Antibiotic

resistance status of currently used drugs will be established in newly registered patients and patients with relapses. Suspected animal sources will be searched for by ELISA screening of sera and milk. LS will confirm serological results and primary cultures but also attempt direct isolation from suspected infected material (human blood, milk, abortion material). Kyrgyz public health authorities will be informed on the species spectrum of human brucellosis, levels of drug resistance and sources of infection. In Switzerland, LS will thereby establish its diagnostic capacity with field material. Validated molecular biological diagnostic and typing methods will be transferred to Kyrgyzstan by training of two Kyrgyz specialists (public and animal health) in Switzerland and by the provision of equipment and reagents.
Laboratory work will be done at LS and at the Swiss Reference Centre for Zoonoses at the Institute of Veterinary Bacteriology of the University of Berne. For the technology transfer, Kyrgyz collaborators will be trained at LS during specified training periods

Conclusion
In analogy to the study in Mongolia (Roth et al. 2003), by shifting from S19 vaccine to Rev1, we expect that a mass vaccination campaign for brucellosis in livestock over ten years would be profitable for the Kyrgyz nation and alleviate a serious public health threat. It is also a step towards the control of contagious diseases which could open international markets for Kyrgyz livestock products.

(1) (i) export to Khazakstan (ii) sales for slaughter, (iii) consumption, (iv) mortality due to the collapse of vet services, lack of knowledge on animal husbandry, shortage of animal feed after the assets distribution.
(2) OIE = World Animal Health Organization

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Joint human and animal health services and joint livestock and human demographic surveillance

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The Swiss Tropical Institute, in close collaboration with national and international partners, has set up an interdisciplinary research and action programme to identify, test, and evaluate health interventions in nomadic pastoralist settings of Chad, Mali, and Mauritania. A combination of natural and social sciences and a transdisciplinary approach (combining scientific knowledge with the know-how of lay people) helped improve our understanding of the health priorities of the nomadic pastoralist (Schelling et al., 2007b). These assessments showed not one fully immunised nomadic child or woman while their cattle were largely vaccinated. Because preventive veterinary measures were designed at the outset to reach mobile populations, but public-health services were restricted to static health centres, failing to account for mobile lifestyles.

It became evident that mobile pastoralists are marginalised from development processes and vulnerable to exclusion from health services because of their geographical, social, and cultural environment. The weak infrastructure and quality of service in both the public health and veterinary sectors are closely related to resource constraints, especially lack of qualified staff. Therefore, professionals from theWorld Health Organisation and UN Food and Agriculture Organisation have suggested that public health and veterinary services should share resources.

Schwabe showed the outcomes and potential benefits of the “one medicine” as added value to public health that could not be achieved by the disciplinary approaches alone. He discussed the added values to public health of “one medicine” for food and nutritional security, zoonoses, comparative medical research, epidemiology and population medicine, environmental quality, mental health, and ethics. Zoonoses have been mostly eliminated in industrial countries with very large financial and organisational efforts focused on the animal reservoir. These solutions are not affordable in contemporary developing countries. The research of joint human and animal interventions and models, provide the approaches to assess the importance and epidemiological links of several zoonoses. The importance of brucellosis and Q-fever and their related animal hosts were identified in this way in Chadian nomadic pastoralists. New strategies can be found for developing countries to respond adequately to existing and emerging zoonoses (Schelling et al., 2005; Schelling et al., 2007a; Zinsstag et al., 2005).

Joint human and animal vaccination campaigns in Chad

According to the one medicine principles the STI is providing child vaccination, one of the most cost effective health interventions, in developing countries, in Chad (Schelling et al., 2005). Between 2000 and 2007, 15 vaccination campaigns for nomadic children and women were conducted among three ethnic groups (Fulani, Arabs, and Dazagada) in the areas where the communities concentrate during the dry season. With one exception, each vaccination campaign from 2000 to 2005 was composed of three vaccination rounds to enable full vaccination of children. The capacity of existing mobile veterinary infrastructures was extended to allow for simultaneous vaccination of people and animals in 11 out of the 44

vaccination rounds. The campaigns were set up with the local health and veterinary staff to avoid parallel structures and to make use of all existing infrastructure (cold chain and transportation).

In intervention zones, from 2000 to 2004 for the first time ~10% of nomadic children (>1–11 months of age) were fully immunized annually. Veterinarians vaccinated 149,255 livestock against anthrax, pasteurellosis, blackleg, and contagious bovine pleuropneumonia. After 3 visits from the vaccination team, 4,653 children <5 years of age were fully immunized against diphtheria, whooping cough (pertussis), and tetanus (DPT) and against polio; 7,703 women received at least 2 doses of tetanus vaccine (TT2+). More children and women were vaccinated per day during joint vaccination rounds than during vaccination of persons only and not their livestock (130 vs. 100, $p<0.001$) (Schelling et al., 2007a).

Evaluation of joint vaccination campaigns
These joint campaigns not only showed the technical and organisational feasibility of simultaneous vaccination, but in a first assessment also reduced costs by 15% compared with separate campaigns by sharing equipment and transport logistics between veterinary and public-health personnel (Béchir et al., 2004). To evaluate this intervention further on coverage and health impacts, estimates about population sizes and mortality in these highly mobile pastoralists settings are neccessary, even if there are estimates gained due to a Triple-catch mark-recapture based baysian model (Schelling et al., 2007a).

There is thus a need for demographic and health information surveillance for highly mobile people. Household methods are not applicable on mobile populations. New designs and tools trying to tackle the survey problem of mobile households are needed. A ”multiple mark-recapture” model combined with digital fingerprint technology is currently been tested. Expected results are estimates of the population size that is living in the dry season at the southern border of Lake Chad and estimates about child mortality in these nomadic populations. The same problem of laking baseline demographic date is facing us also on the livestock side to evaluate the livestock vaccinations. Therefor we conduct a “mark-recapture” experiment, where young cattle of the same nomadic communities have been earmarked to gain total livestock number estimates.

There is a considerable effect of joint interventions next to the reduction of costs: The veterinary and public health staff observed that when the two sectors were present together, pastoralist families vaccinated their livestock and children more spontaneously (Schelling et al., 2007a). An epidemiological survey in 1999 and 2000 showed that half of nomadic pastoralists had never visited a health centre and a first contact with the health staff was established during the vaccination programme. We can conclude that the institutional collaboration between public health and veterinary services seeks to strengthen health services for hard to reach populations by making better use of existing resources and to identify appropriate control strategies for zoonotic diseases. (Schelling et al., 2005)

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2) Course Bulletin

Health Care and Management in Tropical Countries course (HCMTC) started

On March 3rd the 2008 HCMTC course started with 20 participants from 14 different countries: Afghanistan, Australia, Germany, Iran, Italy, Ivory-Coast, Kenya, Liberia, Myanmar, Nepal, Nigeria, Sudan, Switzerland and Tanzania. 56 facilitators (30 from STI) are involved in the teaching activities. The course participants will finish the course May 30th. We wish them a successful course and a nice time during their stay at the STI and in Basel.

3) STI Symposium

THE 11TH STI SYMPOSIUM, APRIL 22nd 2008

THE ROLE OF INFORMATION & COMMUNICATION TECHNOLOGIES IN HEALTH SYSTEMS DEVELOPMENT

Please send us your registration and mark the date in your agenda!
--> As the numbers of seats are limited we would appreciate your early response

Online registration form: http://www.sti.ch/about-us/11th-sti-spring-symposium-2008.html#c2019

The Swiss Centre for International Health (SCIH) of the Swiss Tropical Institute (STI) is organizing its annual spring symposium. This time we will be focusing on Information and Communication Technologies (ICT) and their impact on health systems development.

The potential of modern Information and Communication Technologies (ICT) as a means to achieve development goals has received great attention in both the international literature and the media; and there is a widely held consensus that the possibilities are still emerging. This is also apparent through the resonance the topic creates in international conferences e.g. the "World Summit on the Information Society" in Geneva and Tunis or the "Geneva Forum on ICT" in 2006. The ICT agenda for global health places particularly high expectations upon electronic medias and the efforts being made by WHO in the frame of the Global Observatory for eHealth.

The symposium offers a platform for the exchange of experiences and lessons learned and for taking a closer look at practical examples from field settings around the world. More specifically, we will be addressing the following questions:

- Where have successful initiatives taken us? At what level? What can we already learn from these experiences?
- What solutions have been successfully implemented? What are the hurdles and the recommendations on how to overcome them?
- What are the upcoming trends, which policy changes might we expect?
- Potential and limits of ICT in health systems development. What are the advantages and disadvantages?

The following topics will be considered in the thematic field "ICT and Health":

- Telemedicine and eHealth
- Health Management Information Systems
- Knowledge Management and eLearning

Invited speakers and experts from the Institute will discuss these questions and will provide the latest available information on progress at local, national and international level, as well as experiences from field work. To insure a riche debate, we are inviting speakers from the North and the South, from multilateral and bilateral agencies, from large and small NGOs.

We sincerely hope this symposium will interest you and are looking forward to welcoming you here in Basel.

Kind regards.
Nick Lorenz, Martin Raab
Swiss Centre for International Health

Key information

- April 22nd 2008, Swiss Tropical Institute, Basel, Switzerland
- All day event from 9:30 to 17:00
- Lunch will be offered to registered participants
- Participation is free of charge
- The symposium will be conducted in English
- No simultaneous translation will be available
- Number of participants is limited

Tentative Program

Registration and Coffee **09:00 – 09:30**			
Opening Session 09:30 – 10:00			
09:30	Welcome	Marcel Tanner	Swiss Tropical Institute, Basel
09:40	Current trends and future perspectives for ICT supporting health systems development	Yunkap Kwankam	WHO, Geneva
Telemedicine and eHealth 10:00 – 12:00			
10:00	Clinical Management of HIV/AIDS through Telemedicine; comparison of open source vs. commercial systems	Maria Zolfo	Institute of Tropical Medicine, Antwerp
10:15	Supporting care professionals where they are most needed: experience with telemedicine and distance continuing education in Africa	Antoine Geissbuhler	University Hospital Geneva, Geneva
10:30	Telemedicine fostering professional networks and strengthening medical collaboration in the Ukraine	Marc Blunier	Swiss Tropical Institute, Basel
Coffee Break			
11:15	Latest Prospects for Open Source Medical Records Systems for Resource Poor Settings	Chris Bailey	WHO, Geneva
11:30	Biometrics for individual identification in field-based health surveillance systems. Experiences with nomadic pastoralists in Chad	Daniel Weibel	Swiss Tropical Institute, Basel
11:45	Discussion		
Knowledge Management 12:30 – 13:00			
12:30	Systemic Quality Improvement (SQI) in Cameroon und Guinea	Peter Rave	GTZ, Eschborn
12:45	Knowledge Audit on HIV/AIDS in Latin America and the Caribbean	Bertha Camacho	Skat, St.Gallen

Lunch Break 13:00 – 14:00			
eLearning 14:00 – 15:30			
14:00	E-learning: “International Approaches to Health Financing and Health Insurance”. Experiences from Asia	Ralf Panse	InWEnt (Internationale Weiterbildung und Entwicklung, GmbH), Germany
14:15	"ICATT (IMCI Computerized Adaptation and Training Tool) and its potential for strengthening health systems"	Vera Haag Arbenz	Novartis Foundation, Basel and WHO, Geneva
14:30	Being prepared: computer based training for the emergency response to cholera and shigella outbreaks	Joachim Pelikan	Swiss Tropical Institute, Basel
14:45	The role of eLearning to support Ukrainian health professionals’ continuous training needs	Vladimir Krasnov	National Medical Academy for Post Graduate Education, Kiev
15:00	Discussion		
Short Break			
Health Information Systems 15:45 – 16:30			
15:45	Health Metrics Network: Towards a new vision for health information systems	Don de Savigny	Swiss Tropical Institute, Basel
16:00	Health Metrics Network: Emerging country experiences for strengthening health information systems	Sally Stansfield	Health Metrics Network, WHO Geneva
16:15	Enterprise architecture for more integrated information technologies for health systems	David Lubinski	Health Metrics Network, WHO Geneva
16:30	Discussion		
Closing Session			
17:00	Concluding remarks and closing of the symposium	Nicolaus Lorenz	Swiss Tropical Institute, Basel

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4) News from STI staff

Niklaus (Niggi) A. Weiss, Deputy Director and Head of Department of Medical Parasitology & Infection Biology was retired after 35 years of continuous service with and for the Swiss Tropical Institute.

In 1970, Niggi Weiss caught great interest in laboratory and field work and even before finishing his PhD undertook major field work in Madagascar on the control of schistosomiasis. After having graduated with a PhD on filariasis, using the rodent model of *Dipetalonema vitae* (now *Acanthocheilonema vitae*), as medical parasitologist he pursued postdoctoral studies by extending his field to immunoparasitology and basic immunology with postgraduate courses at the University of Zurich and a successful stay at the newly opened Basel Institute of Immunology.

Rejoining STI in 1973, he brought immunology to STI and successfully developed the diagnostic approaches for parasites which accompanied and strengthened the development of the medical department and hence the medical services at STI. New challenges came with his nomination as Head of the Department of Medical Parasitology & Infection Biology and Deputy Director in 1997.

Carried by his great commitment for STI he not only stimulated many departmental developments, but mainly also headed STI's new developments in teaching and training and e-based learning and knowledge management resulting in a new approach on how STI's specialties were introduced at the University of Basel and the process of the Bologna reform. Niggi Weiss not only led the restructuring of the BSc block courses in biology of infection and epidemiology but also set up the MSc course with majors in biology of infection and epidemiology.

In addition, he was the key coordinator of STI's infrastructural developments during decades. Many renovations and new investments carry his imprint and roots. We are deeply grateful to his many contributions over these 35 years at the scientific level and for the understanding and controlling the "wormy world" as well as for teaching, training and keeping our structural development matched with our goals and visions.

We warmly acknowledge his great commitment to the goals of STI and his loyalty to the institutions and the teams he led and developed. We wish him the very best for his future and a wonderful time in retirement, as he is certainly only retired but not tired. We look forward to seeing him regularly at STI when he will assist us in the major renovations of our buildings in the next years to come.

Prof. Dr. Marcel Tanner, Director

5) STI and SCIH designated as WHO Collaborating Centers for Health Systems Development and for Research and Capacity Building in Environment and Tropical Public Health

Since February 2008, **the Swiss Center for International Health (SCIH) of the STI** has been designated as **WHO Collaborating Centre for Health Systems Development**. The designation is effective for a period of four years. SCIH's Terms of Reference (ToR) cover virtually all areas of its expertise:

1. To regularly share information, experiences and lessons learned in the area of health system development and strengthening to provide effective, equitable and sustainable health care to populations, and achieve Millennium Development Goals and other internationally agreed on health targets.
2. To perform research, develop policy guidance and provide technical support for developing sustainable health systems in countries with a strong focus on poverty reduction and equity promotion, including solutions in health financing, aid modalities and evaluation of cost-effectiveness of health interventions.
3. To create awareness and build up capacities regarding improved resource planning and management in health systems, including the implementation and evaluation in a number of countries of the WHO resource planning tool “Essential Healthcare Technology Package (EHTP)”.
4. To carry out research, capacity building and technical support to countries in health care infrastructure and technology management, ICT and telemedicine, and health technology assessment as a means to strengthen health systems.
5. To jointly review lessons learned in the area of promoting Human Resource for Health policies and practices for strengthening of health systems, carry further methodological approaches for assessing the HRH availability and requirements, and for establishing effective HRH policies.
6. To support the development of affordable and sustainable models for primary health care which provide increased access for poor and vulnerable groups, and better up-take of priority health interventions by the population, including effective and innovative approaches to strengthening health systems and services management in low income countries.
7. To support the development and promotion of comprehensive quality improvement frameworks, including quality standards and guidelines, tools for quality assurance and quality monitoring mechanisms based on international models for quality management in the health sector.
8. To provide expertise and collaboration in the drug and vaccine development, with a focus on tropical diseases, including clinical trials, postmarket studies, pharmacoeconomics as well as essential drugs.
9. To act as a Centre of Excellence and provide collaboration in the areas of sexual and reproductive health, HIV/AIDS, gender and social development.
10. To provide programme and project advice, appraisal and monitoring to EEA financial mechanisms, GAVI, GDF of the Stop TB Secretariat, Global Fund, other global health initiatives, as well as jointly promote with WHO, a systemic approach to global health initiatives.

SCIH will do its level best to live up to these ambitious ToR.

In July 2006, the **Department of Public Health and Epidemiology (GWE) of STI** has been designated -- also for an initial period of 4 years -- **a WHO Collaborating Center for Research and Capacity Building in Environment and Tropical Public Health**. Among other issues, the ToR include (i) contribute, through interdisciplinary research to enhance the current knowledge-based on water, sanitation and health linkages, and (ii) contribute expertise to health impact assessments (HIAs) of water resources development projects commissioned by international and national development authorities.