

Protection Against Counterfeit Pharmaceuticals by Employing GPHF-Minilabs in Health Facilities of Low-income Countries Worldwide

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When talking about health assistance in international development, people are generally thinking of improving medical services. However, as 35 to 60 % of total health expenditures are used for drug procurement, the German Pharma Health Fund (GPHF) set out to focus its development work on improving pharmaceutical services in private, religious and public health facilities of low-income countries. After 20 years of health assistance for poor settings in Africa and Asia and about ten years of project work on the Minilab, a mini-laboratory to help in the detection of substandard and counterfeit medicines, GPHF's model concepts on drug quality, supply and donation management have been acknowledged and gradually became part of global public health policies. One example is the generation of evidence-based data on counterfeit medicines proliferation for antimalarials and antiretrovirals in the sub-Saharan, Mekong and Amazone region within Roll Back Malaria Partnership Programmes of the World Health Organisation (WHO) and global assistance programmes of the US Agency for International Development (USAID) and the United States Pharmacopeia (USP), respectively. This report presents how these programmes are implemented in South-east Asia and how international cooperation for rapid drug quality verification projects is working in Latin America. It comes as an extension of a review paper on counterfeit medicines proliferation and Minilab use published in this journal (Pharm. Ind. 66, No. 10, p. 1187; 2004).

Vietnam: Antiretroviral Drug Quality in Saigon Underground Supply

After promoting the use of German Pharma Health Fund (GPHF) Minilabs for rapid drug quality verification of antimalarials, antiretrovirals and antibiotics at Vietnamese drug, police and customs authorities in November last year, three Minilabs

have now been established at the municipal health authorities of Ho Chi Minh City, Vietnam's commercial centre in the deep south, for many still better known as Saigon. Here in Saigon metropolis, health authorities are very much concerned where HIV-positive sex workers are getting their daily supply of antiretroviral medicines. Experience proves that supply frequently

must come from outside the legal distribution channels as sex workers are hardly consulting public health facilities for free antiretroviral medicines supply. From where the antiretrovirals are coming, how they are interfering with legal supply and what are their quality status are some questions to be answered in a study recently been initiated in Ho Chi Minh City.

Opening the way for antiretroviral drug quality control in Saigon's underground milieu is the task of the AIDS centres in the Tropical Diseases and the Binh Trieu Hospitals from which volunteers with access to the illegal narcotic market and red-light districts can be recruited for drug sampling. As a harbour town with an international flair similar to Hamburg and Amsterdam, Saigon appears to be the right spot selected for this study. However, an intervention of local authorities is intended only if the quality of antiretrovirals through illegitimate supply routes is indeed very poor and forming a reservoir for counterfeit medicines.

In contrast to this, there is little expectation to find substandard and counterfeit antiretrovirals in the

^{*)} A charitable organisation maintained by voluntary contributions of research-based pharmaceutical companies in Germany.

legal supply chain as stated optimistically by Mr. Van Mo, head of the national institute for drug quality control in Ho Chi Minh City. There are only four reputable suppliers of antiretroviral medicines in the local market out of which Stada (Bad Vilbel, Germany) holds the biggest share with licensed generics for stavudine, lamivudine, nevirapine and zidovudine single and fixed-dose combination products. Maybe it is just this success of a German pharmaceutical manufacturer challenging the drug pirates. Checking this is also part of the investigation.

In the first round last year, training and use of GPHF-Minilabs was financed by the World Health Organisation (WHO) and Australian Therapeutic Goods Agency and now in this year's second round sponsoring was completely taken over by the Asian regional office of the United States Agency for International Development (USAID). Technical input was given jointly by the Global Assistance Initiative (GAI) of the United States Pharmacopeia (USP) and the GPHF with his simple operation procedures on counterfeit antiretroviral medicines detection forming the baseline for this investigation.

Local project champion is the AIDS Committee of Ho Chi Minh City being also in overall charge of coordinating all activities among the seventeen municipal districts and its hospitals, the national health authorities and national institute for drug quality control based in the city. The study shall be closed in April 2006 and the results shall help health authorities in filing policy proposals on evidence-based data for decision makers at municipal, provincial and national level willing to stamp out counterfeit activities on antiretroviral and other medicines in their regions.

Cambodia: Committee for research and study on counterfeit medicines gets support from USP and GPHF

Directly after project initiation in Ho Chi Minh City, USP and GPHF

went on to perform a second training in Cambodia's capital Phnom Penh. Here support was given to the committee for research and study on counterfeit medicines and 24 pharmacists from 24 provincial health departments have been introduced to drug sampling, evidence recording and rapid counterfeit medicines detection procedures enabling them to check the quality of antiretrovirals on the spot on their own when returning home. However, after the presentation of recent counterfeit cases found by the committee [6], other medicines, for example antimalarials and antibiotics, have been included in the study as well.

The committee for research and study on counterfeit medicines consists of representatives from the national institute for food and drug quality control, the national drug registration authorities and the national centre for malaria control, the latter being presented by Lon Chanthap, MD, well known for his contributions to counterfeit antimalarial medicines investigations previously initiated by the WHO Mekong Roll Back Malaria Programme. The study on counterfeit antiretroviral medicines detection will end in April this year, thus allowing to compare data generated in Cambodia with those obtained from Vietnam.

Drug safety shattered

Life in Cambodia used to be more comfortable than anywhere else in South-east Asia. The country exported rice all over the places and was richer than Thailand is today. Nowadays, Cambodia is a synonym for war, extermination, persecution and massive impoverishment. It has the poorest economy in the region. The average annual per capita income is below 300 US-\$. Transformation from state to market economy which started ten years ago is hardly manageable. Former party cadre are forming old-boy connections and the recently established constitutional monarchy cannot keep control over a totally freed

market economy. Even the drug supply is ruled by anarchy [4, 6]. One thousand legally operating retail pharmacies are competing with 2500 unlicensed drug outlets. Out of 6000 finished drug products circulating in the market only half are registered. All of it forming a disaster for drug safety: 10 % of all drugs sold are counterfeit medicines and a further 10 % are expired. The rate of counterfeit antimalarials is even much higher, the majority of it being smuggled into the country and sold in unlicensed drug stores to poor people living in rural areas which have little chance to access alternative supplies.

Supported by the WHO, Cambodia's drug administration bodies identified 35 cases of counterfeit medicines last year and, in addition, import licenses from five companies have been withdrawn [6]. Also in 2004, research work sponsored by the French Pierre Fabre Foundation confirmed the scale of counterfeit medicines proliferation in the country and added some spectacular cases to the overall bleak picture [8]. For example, some antibiotics from the cephalosporin range of products claimed to come from a Swiss company called Rodenon. However, further investigations showed that such a pharmaceutical manufacturer neither exists in Switzerland nor in the rest of Europe and that the reputation of Swiss quality work has been used for marketing purposes. To this story it fits nicely that the analgesic Di-Antalvic from Avensis has been copied three times in a row (Dicintavic, Di-Entalvic, Di-Butalvic). And if it could get any worse, results from Mekong Roll Back Malaria indicate massive counterfeiting of antimalarial medicines and the Cambodian Daily states that one in four malaria pills are liable for counterfeiting in rural areas [5]. An all-clear to Angkor temple tourists cannot be sounded yet. For them it is better to take their pills from home before heading to Cambodia's prime tourist attraction right in the jungle next to the town of Siem Reap.

Cambodia has no means to take action. The state is short of cash, the authorities are weak. Civil service salaries are between 30 and 60 US-\$ per month, completely insufficient to cater for basic needs and not at all competitive to private sector salaries which are about five to ten times higher. Working as civil servant in Cambodia is only possible for wealthy family members seeking power, influence or reputation or for people with a second job in private sector industries or any other supplementary income. These circumstances are a fertile ground for corruption and bribing, and it is not surprising that a big share of publicly procured medicines is getting diverted into the private sector for income generation purposes. This is why even research compounds from clinical trial supplies – performed frequently under the watchful eyes of higher military ranks – are managing to escape army camps for sales to unlicensed drug outlets. It is known that an antimalarial fixed-dose combination called 'Dehydroartemisinin Compound Tablets' from China followed this escape route to pop up private sector supply and turning half of Cambodia's population into guinea pigs.

International aid helps in stabilizing the country

The world community is not helpless in the face of Cambodia's shattered public health system. Well sponsored international development projects are able to change the downward trend and strengthen local expertise with adequate equipment and additional income in order to make careers in public institutions more attractive and qualified people staying – people which would otherwise feel forced to leave for alternative offers in private sector industry, neighbouring countries, overseas or even illegitimate operations. Knowing that most workshop participants are living on a supplementary income scheme, a per diem has been paid to compensate for losses otherwise incurred when not following up in-

come-generating activities at home during the training in Phnom Penh. When talking, training participants did not hide the deplorable state of affairs in Cambodia's drug supply. In these talks, much emphasize was given to the fact that drug supply might indeed look pretty poor when coming from outside the country, however, it must also be counted for that the situation has much improved when considering the time under Pol Pot's ruling and Vietnamese occupation without any antimalarials available whatsoever twenty years ago. There is little left to argue this. Currently, anarchy might still rule the drug supply in Cambodia as much as in Nigeria or elsewhere in the world, however, a strong will to change for the better and a massive presence of international aid will work in Cambodia's favour. To this strong will, know-how has now been added during the training on basic drug quality testing with the GPHF-Minilab.

Strong partnerships in each and every corner of the world are essential for success

GPHF-Minilabs are not coming with a practical set of basic lab equipment alone. They include also a range of chemicals and reagents which are partly classified as dangerous goods. Showing that these goods can be shipped to almost any destination of the world is a prerequisite for project sponsoring either granted by the WHO and The World Bank or any other governmental and non-governmental advisory and financing body. The shipment of almost 200 Minilabs to 45 developing nations in the recent past is certainly a strong proof that this can be done successfully. Not one box has gone missing and all Minilabs have been cleared by customs so far. However, the Latin American region has always been a challenge which makes a quick response to requests very difficult indeed. For no obvious reasons, absolute minor issues, for example the glass quality of straight pipettes, can all in the sudden become a big thing and must be certified before shipment can start. In this region,

there is no protection against the creative potential in delaying clearances – not even for the most advanced forwarding experts. One can always be taken by surprise. Knowing all this very well, help comes now from the Pan American Health Organization (PAHO). As WHO regional office it is part of the United Nations family and a strong partner in facilitating shipments to the Amazon Roll Back Malaria programme. Virtually equipped with UN passport and diplomatic immunity, Minilabs are now entering without restrictions any country of this region and national regulations are not counting anymore.

References

- [1] Malaria: Dozens dead in Cambodia from counterfeit drugs, United Nations Foundation UN Wire, May 30 (2000)
- [2] Newton, P., Proux, S., Green, M. et al., Fake artesunate in southeast Asia, *Lancet* **357**, 1948 (2001)
- [3] Rozendaal, J., Fake antimalaria drugs in Cambodia, *Lancet* **357**, 890 (2001)
- [4] First study report on counterfeit and substandard drugs in Cambodia, Cambodian Ministry of Health – World Health Organization (2001)
- [5] Vachon, M., Test show 1 in 4 malaria drugs sold in provinces is fake, *The Cambodia Daily*, August 28 (2003)
- [6] Second study report on counterfeit and substandard drugs in Cambodia, Cambodian Ministry of Health – World Health Organization (2004)
- [7] Jähnke, R. W. O., Counterfeit medicines and the GPHF-Minilab for rapid drug quality verification, *Pharm. Ind.* **66**, 1187 (2004)
- [8] Castelbou, R., Les faux médicaments dans les pays émergents. L'exemple du Cambodge, Doctoral Thesis, Faculty of Pharmaceutical Sciences, Toulouse University III, January 21 (2005)
- [9] Aldhous, P., Murder by medicines, *Nature* **434**, 132, March 10 (2005)

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