



WHO/DFID-AHP MEETING ON CONTROL OF ZONOTIC DISEASES: A ROUTE TO POVERTY ALLEVIATION AMONG LIVESTOCK-KEEPING COMMUNITIES

WHO HEADQUARTERS, GENEVA (SALLE D)
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3.1 GENERAL BACKGROUND

The joint WHO and DFID Animal Health Programme meeting being held under the title “Control of Zoonotic Diseases – a route to poverty alleviation in livestock-keeping communities” has as its objective the bringing together of people from four different groups – the scientific and research community, UN agencies and other international organizations, nongovernmental organizations and development agencies, all working in two different fields – veterinary and animal production, and medical and public health, to discuss a problem affecting both fields. The meeting will highlight the gravity of the problem posed by various zoonotic diseases, the extent to which their control is neglected and the potential for realizing substantial benefits to human and animal health by effectively controlling these diseases.

Most international aid agencies are committed to the Millennium Development Goals and have an overarching objective to alleviate poverty. The UK government is particularly committed to finding ways to improve the situation in Africa, the continent receiving the largest share of DFID investment. In March 2005, the UK’s Commission for Africa produced its report on how to work towards poverty alleviation in Africa¹. Two of the key areas for intervention highlighted were human health and agriculture. Agriculture is seen as a key driver for economic growth to alleviate poverty. The Commission mentioned the “huge burdens from pests, weeds and diseases affecting crops and livestock” faced by African farmers. It pointed to the need to strengthen poor people’s physical capital, which for as many as half of poor rural households includes livestock. Turning to the problems of human health, the Commission highlighted the fact that cost-effective solutions already exist for many of the diseases that affect Africa’s poor. For many of these diseases it is funds which are lacking, but more often the health services are ill equipped to deliver the remedies required. These problems of access and affordability of healthcare particularly affect the poor.

Eliminating preventable diseases:

Africa is afflicted by a number of diseases which are entirely preventable... Disease burden and economic growth are intimately related. Healthy people are more productive and more likely to be able to take care of their children, benefit from education, and contribute to society... Poor people are the worst affected. Health centers may be too far away, or have no staff. Many health workers do not have transport to reach patients. Often the available funds are not equitably shared between services reaching the poorest and the better off... Many parasitic diseases, which largely affect poor people, have simple, cost-effective solutions ... but remain untreated.

UK Commission for Africa Report (March 2005)

Whilst the Commission was writing about Africa, what it says applies equally well to poor people throughout Asia and South America. This meeting’s focus is on zoonotic diseases in all three continents.

Zoonotic diseases – a special case

One group of human diseases where lack of uptake of the available control strategies is constrained by more than just access and affordability are the zoonotic diseases. These are the diseases which are shared by both people and animals and have a dual impact on both human and animal health and, if effectively undertaken, their control can also generate a dual benefit by making both people and

¹ Commission for Africa Report (March 2005) 458 pp. www.commissionforafrica.org

livestock healthier. However, despite this potential for wider impact, the dual nature of these ‘zoonotic diseases’ has tended to mean that they lag behind all other disease groups in attracting funding and effective control measures. The reasons, as outlined by Schwabe² in his classic text, are very simple. Often the most effective control strategy is to deal with the animal reservoir, for example by vaccinating dogs for rabies or dealing with tuberculosis or brucellosis in cattle herds. The responsibility for this and its cost thus fall predominantly on the veterinary services. The major beneficiaries are people and the human health services which can save the resources which would otherwise be needed to treat them. Since many veterinary and health services are both greatly over-stretched and under-funded, it is not surprising that zoonoses control is, as described by Schwabe (1984)² “falling between sectoral chairs”.

“Because zoonoses management involves participation of both the economic (agriculture-food) and human health sectors, and each sector sets its priorities differently, it is not difficult to see why many zoonoses may not receive sufficiently high control priorities through either process for control to be justified. This fact is heightened by the second fact that zoonoses are among the most seriously under-diagnosed diseases in man in most countries.
*Veterinary Medicine and Human Health*² (Schwabe, 1984)

The second point Schwabe highlights is the problem of *under-diagnosis*. In the developing world, most human diseases are under-diagnosed, particularly among the poor and this under-diagnosis reflects the limited capacity and coverage of the health services. However, in the case of the zoonotic diseases, this problem of under-diagnosis is further aggravated by the uneven geographical distribution of these diseases and by inherent difficulties in diagnosing some of the diseases. To cite some examples, brucellosis, whose principal symptom in people is recurrent fever, hence its popular name in the United Kingdom, ‘undulant fever’, is almost always thought to be drug-resistant malaria in Africa. Sleeping sickness is very difficult to diagnose, since the parasites in the blood are not always evident and screening tests often generate a high proportion of false positives. Few hospitals have the diagnostic capacity to distinguish bovine tuberculosis from the more common form of human tuberculosis. The symptoms caused by the various tapeworms and cysts transmitted via cattle, pigs, dogs and sheep are not easily differentiated from the many other intestinal problems and tumours found in various human populations.



Three key components for dealing with zoonoses: effective control strategies, and targeting both (a) people and (b) animals.

² Schwabe, C. W. (1984) *Veterinary Medicine and Human Health* (Third Edition) Williams and Wilkins, Baltimore USA. 680 pp.

Zoonotic diseases and poverty

Zoonotic diseases occur in both urban and rural settings and affect both those handling livestock and those consuming livestock products. However, as Schwabe states below, their impact is above all on livestock producing households and communities.

“However, no other of these high-risk groups even approaches farmers and farm families in their numbers. Since these people who often live in very intimate contact not only with domesticated, but also with wild vertebrate animals and invertebrate vectors, are also the proportion of the population with least access to primary health care and competent diagnostic services, the actual burden of zoonoses upon them has been very poorly estimated and reported in most countries. While major zoonotic diseases may not even be reported as existing in some countries, fevers of unknown origin (FUOs) are especially commonly seen and encephalitides, diarrhoeas, pneumonias and dermatoses are among the other prevalent broad categories of disease for which diagnoses are often lacking.”

*Veterinary Medicine and Human Health*² (Schwabe, 1984)

Within this group it is the poor people who are least likely to be correctly diagnosed and treated. Unsurprisingly, the low priority accorded to the control of zoonotic diseases and the difficulties and often high cost of diagnosing and treating them means that the ultimate outcome for poor people infected with these diseases is particularly bleak. Those who fail to get the expensive post exposure treatment for rabies or to be correctly diagnosed as having sleeping sickness rather than AIDS, simply die.

It is also likely that poor people actually run a higher risk of exposure to and infection with zoonoses. The reasons for this are discussed in Coleman (2002)³. This is because they often, particularly in rural and peri-urban settings, live in close contact with their livestock so that they are more likely to be infected by direct contact or by vectors. Many zoonotic diseases, such as cysticercosis and food and water-borne zoonoses, are associated with unsanitary living conditions for both animals and people. In some areas, the deterioration of veterinary services and the shift to private sector delivery mean that poor people are less likely to be able to invest in treatment or preventive measures for their livestock, so that their animals are often less healthy. Poor consumers are also those most likely to be buying cheaper meat and milk from outlets where it is not inspected or refrigerated, or in the case of milk, pasteurised.

Over 200 zoonoses have been described and they are known since many centuries. They involve all types of agents: bacteria, parasites, virus and unconventional agents. Zoonoses still represent significant public health threats, but many of them are neglected. They are affecting hundreds of thousands of people, especially in developing countries, although most of them can be prevented.

*WHO (2004)*⁴

Saving lives ~ securing livelihoods

Thus zoonotic diseases impose a disproportionately high burden on poor people's health, both in terms of severity and incidence. Returning to the concept of the 'dual burden', these diseases then also affect their livestock, causing death or chronically lowered productivity. As WHO states (see above) there

³ Coleman, P. (2002) Zoonotic diseases and their impact on the poor. In: B D Perry, T F Randolph, J J McDermott, K R Sones and P K Thornton (2002) "Investing in animal health research to alleviate poverty" International Livestock Research Institute (ILRI) Nairobi, Kenya, 130 pp. plus annexes.

⁴ Taken from www.who.int/zoonoses/en

are ways of preventing or controlling most of these diseases. There are a number of reasons why they are not applied. In many cases, the control measures which have worked well in Europe cannot easily be applied in developing countries. For example, in the United Kingdom, brucellosis was eradicated and bovine tuberculosis is controlled by slaughtering infected cattle. This approach would not be feasible in poor livestock keeping communities in developing countries, where people depend on their animals for their livelihoods and replacements are hard to obtain. However, public awareness campaigns on the importance of boiling milk and better diagnosis of human patients could be undertaken there, but are rarely implemented because health policy makers are unaware of the burden imposed by these diseases. Research is needed to establish where these diseases are present, identify the risk factors which make particular groups of people or livestock likely to contract them and work out cost-effective ways of dealing with them. A change in policy and attitudes to the control of these neglected diseases is needed, with veterinary and medical groups at all levels realising that cooperation will reap a harvest for both people and their animals. And, where cost-recovery is not possible and the diseases particularly affect poor people, funds are needed to support these initiatives. By tackling this dual burden on people's health and that of their livestock, controlling zoonotic diseases thus provides a unique opportunity for alleviating poverty by 'saving lives and securing livelihoods'.

The meeting's structure

From this discussion, some of the key themes which we hope to tackle during this meeting emerge. The need to understand why zoonotic diseases matter, the problem of under-diagnosis, the difficulties of dealing with diseases which involve both medical and veterinary communities and the possibilities of benefiting both people and livestock are key themes which have been picked up both in the overarching presentations and in the success stories. For the working groups, the various issues involved in trying to promote better control of zoonotic diseases in people and animals have been summarised under four headings:

- **advocacy and burden of disease** - how can we raise awareness about the importance of zoonoses and the rationale for their control?
- **institutional issues** - what are the organisational and institutional elements needed for effective zoonoses control?
- **sustainability and resources** - what measures are needed in order to ensure sustainable implementation of zoonoses control strategies?
- **tools for control** – what tools do we have and what new information, technologies and/or methodologies are still needed for effective control?

We hope that these headings will provide sufficient scope for discussing the key issues we face in dealing with these diseases.