EDITORIAL

COMMUNICABLE AND NON-COMMUNICABLE DISEASES: WHAT ARE THE PRIORITY QUESTIONS?

Much of the tropical world is in transition: demographically, economically, socially. Health indicators such as life expectancy (increasing) and infant mortality (decreasing) are changing. In local and global contexts disease patterns no longer follow precisely the same trends as they have done in the past. The consequent need to order and frequently reorder new priorities is an inescapable reality: for the health professionals, for health ministries, for government planners and for the private sector.

As the population pyramid broadens at the top, the relative incidence of chronic, non-communicable diseases expands. The socioeconomic stratum affected often tends to be more affluent than the general population and to include a politically influential subpopulation who can have direct or indirect impacts on health care policy. This same subpopulation often focuses on the probability of diagnosis of cardiovascular disease, cancer, osteoarthritis, oesteoporosis or other degenerative disease and tends to discount the likelihood of acquiring one or more infectious diseases which tend to affect disproportionately the poorer population strata. The outcome is a shift in public expenditure on communicable towards non-communicable diseases management, often accompanied by an expansion in private health sector activity and associated drain of human resources away from control of communicable disease.

Paradoxically, it is in part the advances in control of infections of infancy that has led to increased life expectancy, paving the way for an increasing burden of chronic, non-communicable illness, especially in the expanded older age group. The decrease in infant mortality has been a confidence booster, instilling the belief that communicable diseases are of diminishing importance, thereby resulting in a shift of human and fiscal resources.

Is there any logical basis for creating a sharp divide between communicable and non-communicable diseases other than taxonomic convenience? Both groups encompass examples of conditions which follow a rapid or a slow course, both groups encompass examples of large, limited or apparently zero host genetic components, both groups encompass examples of definable environmental inputs in the disease development process. Further, infectious agents may have contributory roles in the initiation of some chronic diseases generally considered to be non-communicable or may be responsible for complications thereof. In this sense, then, the line between the two broad classes can be somewhat fuzzy.

The matter of relative priorities in health care expenditure on the two broad disease classes is more than academic. One of the factors contributing to the lowering of emphasis on infectious diseases in many countries has been the success of antibiotics in controlling bacterial infections. The curve of rising incidence of antibiotic resistant organisms has already entered the ultimate phase for multidrug resistant *(mdr) Staphylococcus aureus* with the recent report in Japan of resistance to vancomycin, the drug of last resort. Now, *S. aureus* infections are predominantly acquired in hospitals, particularly in intensive care units. What patients inhabit ICUs? Predominantly they have non-communicable diseases requiring specialized surgical or medical management, *eg* cardiac bypass. The nature of that intensive management facilitates *mdr* bacterial infections, so what starts out as a non-communicable problem becomes a serious communicable problem. The ICU-oriented priority changes suddenly to a *mdr* infection priority; the already expensive commitment becomes even more costly and may ultimately overwhelm ICU justification (Cannon, 1995).

Beyond that example, there are others. In many societies tuberculosis has been but a distant memory of 50 years or more past, until recently. Rural-to-urban migration, urban crowding in megacities and inadequately managed supervision of drug regimens, plus the expansion of immune compromised subpopulations, have seen a reemergence of the disease in *mdr* form. Rapid international travel has seen the extension from endemic to non-endemic areas of *mdr* malaria. It has also seen the spread of viral diseases formerly evident in limited geographical domains: dengue hemorrhagic fever and HIV/AIDS are cogent examples. In a sense history is

being reenacted: it was often epidemics rather than the force of arms that decimated isolated populations in the vanguard of invasions in the past. Now the pursuit of economic gains has replaced military conquest, generating again large-scale population movements, with its consequences for rapid dissemination of drug resistant, disease-causing organisms, on a global scale.

Thus the interlude of delusion about the diminished importance of communicable disease has proved to be very short indeed. However, public health systems in rich countries are still focused on non-communicable diseases, with intensified application of the momentous advances in human genetics tending to dominate research programs and funding. In less rich countries there has in many cases been a movement in the same direction, with a shift in resource allocation towards chronic diseases and an increasing emphasis on medical superspecialization in patterns similar to those longer established in the West. This is not surprising: so many health system leaders were trained in the West, governments would like to emulate the West in wealth accumulation and health systems are an integral part of governmental thinking. The private sector often sees its target as being primarily in this latter area, since the more affluent clientele tend to fall into this category. So many societies are less well prepared to meet the challenge of resurgent infections with shorter and shorter lead times for effective therapy and limited preventive measures (Garrett, 1994; Karlen, 1995; McCormick and Fisher-Hoch, 1996).

In addition to the social implications, the economic effects are becoming profound. HIV/AIDS has already challenged the resources of individuals, families and communities. Tuberculosis will increasingly do so. Multidrug-resistant malaria is about to become a potential nightmare in specific regions, with focus on mobile populations. Hospital infections with multidrug-resistant bacteria are reaching the untreatable spectre. The costs are mounting and the poor suffer most severely: the advent of multidrug therapy for HIV is clearly a prerogative for rich countries and rich individuals only at this time, even as the burden of disease shifts markedly to poorer nations. Some potential vaccines (*eg* hepatitis C) are likely to be held for ransom by drug companies who possess exclusive patent protection, thereby discouraging development by less affluent but technologically capable countries such as China or India. The true costs to economic productivity have yet to be properly calculated, but they are certainly not small and will continue to grow.

The need is clearly to develop dynamic models of resource needs prediction and resource allocation geared to shorter term change, with reinstatement of a more appropriate balance between expenditure on communicable and non-communicable diseases. Such accounting must have national, regional and global dimensions. The first is difficult enough to achieve in temporal frame, the other two are usually outside the aegis of national health planning yet they represent essential components of an economically pragmatic vision that elevates health to a par with trade and commerce in the national planning arena. Both health planners and macroeconomic planners should focus on this question: health planners rarely do, macroeconomic planners rarely consider health relevant to their domain.

This changed economic paradigm is of great consequence. Financial commitments tend to change slowly and once new patterns of expenditure are in place it is only with great difficulty that they can be shifted again in a short time frame. This time factor is a major part of the challenge, for to take it seriously is to require major alteration of planning philosophy. This is difficult to reconcile with five-year plans which tend to invent rigid frameworks unable to take the swift turns demanded. The epidemiologic factor is equally important: rapid reaction to threat of epidemics and action to prevent or forestall these. Clearly health planners, administrators must work in consort with economic planners in a flexible scenario if progress is to be made on this front.

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REFERENCES

Cannon G. Superbug: Nature's Revenge. London: Virgin 1995.

Garrett L. The Coming Plague. New York: Penguin 1994.

Karlen A. Plague's Progress. London: Gollancz 1995.

McCormick JB, Fisher-Hoch S. Level 4: Virus Hunters of the CDC. Sydney: Hodder and Stroughton 1996.