The new danger

As the World Health Organization strengthens its stance on neglected tropical diseases in the developing regions with which they have traditionally been associated, some researchers are beginning to draw attention to a threat which has long been overlooked.

**The Toll Exacted** by infectious diseases goes beyond increased mortality and morbidity in affected populations. Research has revealed strong links between a nation’s disease burden and the average IQ of the population, with scientists postulating that the energy wasted fighting infection at the early stages of an individual’s life may have extensive effects on the development of cognitive faculties. Furthermore, the economic impacts of disease, particularly debilitating parasitic infections such as river blindness and elephantiasis, are enormous.

When these factors are taken into consideration, it is clear that while infectious diseases – and especially those termed neglected tropical diseases (NTDs) – are inextricably linked with the regions in which poverty is prevalent, they are also playing a significant role in its perpetuation. Now, many researchers are beginning to suggest that the link between NTDs and poverty is not an issue which is unique to developing countries, and may in fact exist at the heart of some of the wealthiest nations.

“In the richest nation on Earth, far too many children are still born into poverty, far too few have a fair shot to escape it”

– Barack Obama, US President

It is becoming increasingly apparent that NTDs are affecting vast swathes of the American population. Intestinal worms, dengue fever and toxocariasis are just some of the afflictions found in the US; almost exclusively among those living in extreme poverty. Perhaps most alarming is Chagas disease, a tropical illness which can have devastating effects on the central nervous system; the silent spread of which has been referred as ‘the new HIV/AIDS of the Americas’. It has been estimated that up to 330,000 US citizens carry the protozoan parasite which causes Chagas disease, but very few resources are dedicated to fighting this apparently growing threat. Some scientists have suggested that President Obama’s pledge to reduce inequality across the nation might be greatly aided by an increased focus on these NTDs.

“This is not developing versus developed countries. These diseases occur wherever you find poverty”

– Dr Peter J Hotez, Founding Dean, Baylor College of Medicine National School of Tropical Medicine

Other developed nations are certainly not immune to this so-called ‘hidden epidemic’ of NTDs. Populations in poorer regions of southern and eastern Europe are frequently carriers of helminth and vector-borne diseases which are virtually unheard of in wealthier parts of the continent. Similarly, neglected populations inhabiting developed areas, such as the Roma people and Aboriginal Australians, exhibit much higher NTD rates than the national average.

The uncomfortable truth is that although this problem has only recently come to light, in all likelihood the existence of ‘tropical’ diseases in non-tropical, developed countries, is not a new phenomenon at all. The fact that they are common in people who are less likely to seek out medical care is compounded by the lack of NTD-specific knowledge within the medical communities of developed nations like the US. Medics with a lack of training in tropical disease treatment are liable to mistake these conditions for other ailments, promoting further spread in at-risk groups. When a dengue fever outbreak erupted in Houston, Texas, back in 2003, not a single case was correctly diagnosed by a physician.

“[We have] produced overwhelming evidence to show that the burden caused by many of the 17 [neglected tropical] diseases that affect more than 1 billion people worldwide can be effectively controlled and, in many cases, eliminated or even eradicated”

– Accelerating work to overcome the global impact of neglected tropical diseases, World Health Organization, 2012

As the World Health Organization (WHO) looks to target NTDs on a global scale, it is crucial that these overlooked populations in developed countries are no longer forgotten. Pioneering work by researchers such as the team at the National School of Tropical Medicine, located at the Baylor College of Medicine, Houston, Texas, is starting to change the way these diseases are regarded on a larger scale. Their implementation of clinical trial programmes within the US for vaccines to target these diseases of poverty is bringing the fight against NTDs to the nation’s doorstep.