

## Fighting the good fight in Europe

Throughout its history Europe has witnessed the brutal consequences of infectious diseases. The Black Death of the fourteenth century killed nearly 25 million while the deadly influenza pandemic of 1918 killed an estimated 2 million Europeans in less than 2 years. The era of modern medicine and better sanitation ushered in a sense of false optimism. By the 1960s and 1970s many felt it was time to close the book on infectious diseases and pay more attention to chronic ailments such as cancer. The world rejoiced with the official eradication of smallpox in 1980, but this elation was short-lived with the advent of the HIV epidemic within the next couple of years. More than a dozen 'new' or emerging diseases followed hot on the heels of AIDS and many old foes such as diphtheria came back to haunt us. Globally, infectious diseases are still the leading cause of death. Thus, effective surveillance and response must be a top priority for all regions of the world.

In retrospect, the appearance of 'new' diseases and the resurgence of more traditional scourges are not surprising. Modernization of the western world has led to many environmental changes, both social and physical, that have inevitably favored some microbes. Increased migration to cities, changes in social norms, global travel and intravenous drug use are just some of the contributing factors to the HIV pandemic. Changing agricultural practices led to the spread of bovine spongiform encephalopathy and human new variant Creutzfeldt-Jakob disease. Legionnaire's disease only became a problem with the advent of air conditioning, which provided a delivery system through which bacteria could spread. Misuse and the lack of new antibiotics have provided the selection pressure for the re-emergence of many bacteria, such as tuberculosis, as they become antibiotic resistant.

The alarming speed with which severe respiratory syndromes (SARS) spread across the world in 2003, and the threat of another influenza pandemic, both illustrate the need for strong public health surveillance systems. Traditionally, surveillance has been a national responsibility for European countries. However, the creation of the European Union has led to increased population movement, travel and trade, and with it an increased risk of disease transmission. A European agency for disease surveillance is now a necessity. Since 1999 the European Union has managed a range of Communicable Disease Networks that have linked public health institutes around the EU. These networks, partly funded by the EU, were established to provide rapid alerts on new disease outbreaks and coordinate routine disease surveillance. Unfortunately, during the SARS outbreak the network and national agencies failed to report possible cases of disease or convey information regarding European travel restrictions quickly enough. In addition, this system lacked clarity in terms of funding, responsibility and authority. Furthermore, participation was voluntary. Indeed, Europe still requires the help of the US Centers for Disease Control (CDC) or the World Health Organization (WHO) when disease outbreaks occur within its borders.

The need to strengthen the Communicable Disease Networks and place European disease surveillance on a stronger footing precipitated the establishment of the European Center for Disease Prevention and Control (ECDC) by the European Parliament in April 2004. The ECDC will pursue the same objectives as its US counterpart but, unlike the CDC, will function as a decentralized agency coordinating existing European resources. As such, this EU-funded center will provide rapid technical assistance during disease outbreaks by pulling together leading experts from around Europe to work with national authorities in dealing with the particular problem. However, the ECDC will have no regulatory powers and will not run any independent laboratories, raising fears about how effective it will be. The agency's role as coordinator may be made difficult because disease surveillance, quality of data and available resources vary across the EU. Increasingly, epidemiologists require expensive laboratory techniques for their investigations, yet the ECDC lacks funding for independent laboratories; its budget (4.8 million euros for 2005, rising to 29 million 2007) will be too small to fund more than limited services in existing European laboratories. In comparison, the CDC received over 4 billion dollars from the US government in 2004.

As the annual budget of the ECDC rises, many of these issues should be alleviated. In the meantime, the choice of a strong director\* for the agency will be imperative to attract high-caliber scientists and formulate a working plan for the loosely defined ECDC. An immediate problem that needs tackling is the differential use of antibiotics within the EU, which is driving the evolution of multi-drug-resistant bacteria within Europe. The likelihood of another influenza outbreak means the ECDC must also establish guidelines for European states in the event of a pandemic and ensure vaccines are easily mobilized and readily available to all member states. Hopefully, a strong director may also realize the need, and convince the EU that the ECDC could benefit from running independent laboratories so that affected countries within Europe will not have to rely on local facilities or laboratory services provided courtesy of the WHO or CDC.

The costs of disease pandemics are enormous, both socially and economically. Despite its current deficiencies, the ECDC marks one positive step forward in the battle against infectious diseases. Another ray of light has been the creation of the Centre for Health Protection in Hong Kong late 2004. However, many other nations still need to improve their disease surveillance. To prevent or curtail the spread of disease requires the cooperation of nations on a global scale. It is unlikely that we will ever rid the planet of infectious diseases. However, better disease surveillance around the globe is the next step. Only by preparing now will we be ready to face any future enemy head on.

\*The director of the ECDC is expected to be decided by mid-December 2004, after this article has gone to press.