

Communicable disease control—still a core public health function

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'Now wash your hands.' It is an old message, and a simple one, but it is one of the foundation stones on which the whole of public health is built. One hundred and fifty years ago isolation and hand washing were almost the only tools available to public health, but since then many new and powerful control measures have been developed. At the start of the 21st century, early detection, use of proper antibiotic agents, surveillance, and vaccination can and do prevent death and loss of quality of life. But even in the rich developed world, the burden of infectious diseases still ranks as third or fourth leading cause of death (Israel¹ and USA,² respectively). In England, according to the Health Protection Agency,³ the annual cost of treating infectious disease is estimated at approximately £6 billion and around half of all children's consultations with general practitioners are still for infectious diseases. Controlling communicable disease remains a vital battle in the war for the public's health. The most successful interventions nowadays depend on vaccines, but even when such technical possibilities are absent, old traditional measures such as isolation and hand washing can still be a very effective means of control—as was shown in the containment of SARS.

Infectious disease is not all grim news. Mention anything to do with the structure, function, or lifecycle of viruses, bacteria, parasites, fungi, or prions to a colleague working in the field of communicable disease control, and watch their eyes light up! Professionals in this field often do not regard these (microbiological) agents as enemies to be eradicated, but more as rival players on an opposing team—to be respected but, ultimately, beaten. Understandable perhaps, because the vast majority of these agents are potentially very useful (e.g. in making beer or cheese) and even essential for our survival (enteric bacteria play a vital role by breaking down a wide range of foods in our gut so that we can digest them). Even more understandable when you consider that we use products of the one (fungal toxins) to outwit the other (killing bacteria). Entirely logical, because when looking at viruses we see the origin of life on this planet.

The first forms of life in the primordial soup were the RNA-(retro)viruses, and thus also, the ancestors of our own life. The next step in the evolution presumably was bacterial micro-organisms. By replication, they formed an enormous biomass

that changed the environment dramatically and enabled the development of many more organisms. Since that time our globe has been covered with a thin layer of microbial life where later we and other animals developed and now try to survive. It is an illusion that we will ever be able to eliminate infectious diseases, as we tend to live in an ever changing equilibrium with these organisms. They adapt remarkably quickly to new situations thanks to extremely rapid and flexible reproduction, while we have to rely on our intelligence to try to reduce the burden of accidental infections of occasional disease-causing organisms—'It is our wits versus their genes' (Joshua Lederberg). This equilibrium determined the development of human society,⁴ and our history is heavily influenced by infectious diseases.⁵

To ensure that we continue to outwit the ever evolving genes of infectious agents, practitioners of communicable disease control in the 21st century also need to be conversant with the whole spectrum of modern public health practice including policy development, epidemiology, health promotion, health services research, utilization of medicines, and health economics. Practitioners of communicable disease control are therefore part of the public health family, and have found in EUPHA a forum where public health professionals in all these fields meet, share knowledge, and exchange views. Control of communicable disease requires the application of the most advanced scientific and technical developments, whether we are exploring new techniques to overcome shortage of flu vaccine using cell lines, or using mathematical modelling to help develop prevention strategies. The traditional medical skills of diagnosis and disease management underpin our daily work with individuals and groups, but our focus is always to protect the public's health, and our methods range beyond those of our clinical colleagues to include tools such as sophisticated epidemiological investigation or high profile media management. Although communicable disease control was one of the foundations of the public health movement, our section is among the newest in EUPHA and we look forward to playing an active role in this forum where policy, research, and practice meet.

Footnotes

Note: The views expressed in this paper are personal and do not necessarily reflect the views of the employing organizations

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