Strengthening Australia's WHO Collaborating Centre for Reference and Research on Influenza

During the coming year, the WHO Collaborating Centre for Reference and Research on Influenza (the Centre) will relocate to new facilities at the Victorian Infectious Diseases Reference Laboratory's (VIDRL) North Melbourne site. There it will expand both in size and in the scope of its activities.

This is an exciting opportunity to bring together and build on the complementary strengths of two leading laboratories. A strong revitalised Centre will be key to the management of seasonal and potential pandemic influenza, as well as other emerging respiratory viruses. The Asia-Pacific region seems, disproportionately frequently, to have been the location of such emergences, of which the current global highly pathogenic avian influenza (HPAI) A H5N1 outbreak has threatened to be the greatest.

History and role of the Centre

The Centre was established as a Regional Influenza Centre in 1951, located at CSL Limited (then Commonwealth Serum Laboratories), the Australian manufacturer of influenza vaccines. Since that time, the Centre has been an important part of the WHO influenza surveillance network. This international laboratory network was established in 1947 to monitor changes in influenza viruses which, over time, diminish the effectiveness of vaccines.

The Centre was designated as a WHO Collaborating Centre in 1992 in recognition of its expertise, and of the need for a centre in the southern hemisphere. Together with collaborating centres in London, Atlanta and Tokyo, it serves as a global specialised laboratory within the WHO influenza network which now comprises approximately 110 national laboratories in 80 countries.

Mike Catton

Director, Victorian Infectious Diseases Reference Laboratory (VIDRL)
Locked Bag 815
Carlton South VIC 3053
Tel: (03) 9342 2636
Fax: (03) 9342 2666
E-mail: mike.catton@mh.org.au

Essentially the Centre's role is characterising influenza strains circulating in the southern hemisphere and gathering surveillance data regarding their activity (Figure 1). These data are shared with the influenza network and facilitate choice of optimal influenza virus vaccine strains. In recent years, surveillance for antiviral resistance has assumed increasing importance, although this is not covered by the current terms of reference.

The Centre also provides expertise for training of scientists, and for pandemic preparedness planning by WHO and governments. Finally, the Centre undertakes research, in-house and collaboratively, that informs its key responsibilities and supports public health responsiveness to influenza.

Having been supported by CSL for years despite constrained resources, the Centre now needs an upgrade to meet the challenges ahead, of which a threatened influenza pandemic is not least. In September 2005 the Australian Commonwealth Department of Health and Ageing (DoHA) sought funding applications from institutions able to host an expanded and upgraded Centre. The

- To obtain and preserve representative strains from outbreaks and sporadic cases of influenza in most countries of the southern hemisphere, fully characterise their antigenic properties and distribute them to research and production laboratories.
- To exchange information and new antigenic variants of influenza viruses with the WHO Collaborating Centres for Reference and Research on Influenza in Atlanta and London.*
- To advise on the strains which should be included in influenza vaccines.
- To arrange for the training of research workers in specialised techniques for isolation, diagnosis and studies of influenza viruses.
- To collect epidemiological information on the prevalence of influenza in most countries of the southern hemisphere.
- To assist WHO and national health authorities in developing plans for responding to pandemic influenza and to undertake work programmes which will improve the pandemic response.

*The current Terms of Reference were drafted prior to the designation of the WHO Collaborating Centre in Tokyo.

Figure 1. Current Terms of Reference of the Centre.

2005-06 Australian government budget provided funds of up to $23.2m over 4 years to achieve this.

VIDRL was subsequently selected through a competitive process by DoHA as the new Centre host. VIDRL will take over the management of the Centre on its current site in late 2006 once transition arrangements are finalised. On completion of new Centre facilities at VIDRL's North Melbourne site in 2007, the Centre staff, equipment, reagents and materials will relocate to VIDRL.

A relocated and strengthened Centre

The Centre is now poised on the verge of a new and exciting era. It will have a renewed mandate, relative freedom from resource constraints, new facilities, expanded collaborations and integration into a leading virology reference laboratory. Strong support from WHO and the Australian government have made this possible. Professor Ian Gust and Mr Alan Hampson, Director and recently retired Deputy Director respectively, have led the Centre successfully to the beginning of this new era, and can take considerable credit for securing its future.

The new resources made available to the Centre will allow expansion in numbers of staff, and we may expect a revitalised Centre to attract a high standard of staff. A broader range of skills will be brought into the Centre. For example, the epidemiology expertise informing the Centre's surveillance programmes may be enhanced through staff recruitment as well as support from VIDRL's division of epidemiology. In addition, strengthening the scientific and research staff skill base in areas such as vaccinology and antivirals will be possible. Resources will provide a high standard in laboratory capability and a high general standard of working environment for staff. There will be more space, better equipment and specialised facilities.

VIDRL can underpin the Centre with the infrastructure and capability of one of Australia's leading public health virology laboratories. This brings greater scale to the Centre's capability, along with access to specialised facilities and a broad range of expertise in virology, epidemiology and research. To cite two examples, VIDRL's outbreak management laboratory, currently being commissioned, will provide surge capacity in excess of 500 PCR assays per day. Also, in operating the Centre's containment laboratories, its staff will have support from VIDRL staff experienced in the scientific, infrastructural and safety aspects of Physical Containment Level 3 (PC3) and PC4 laboratory operations.

At VIDRL, the Centre can link with other WHO programmes which mirror the Centre in their relationships with regional partners as well as activities such as surveillance, reference testing, proficiency programmes, consulting and training. These include WHO Collaborating Centres (for virus reference and research, and for biosafety in microbiology), WHO Regional Reference Laboratories (polio, measles) and membership of WHO networks (Global Outbreak Alert and Response Network (GOARN) and SARS Laboratory Advisory Network).

Enhancing the Centre's role

A new Director of the Centre will be appointed following an international search process. Without pre-empting the need for this Director to place their stamp on the Centre, it is possible to signal some general future directions and potential opportunities.

The Centre's terms of reference (TOR) will be reviewed to ensure that they capture the essentials of the Centre's future direction and any refocusing of the WHO Global Influenza programme. Since the current TOR were framed in 1992, technology has changed and demands on the Centre have grown. Now expanded resources have become available.

While the core Centre functions of today need to continue, a strengthened Centre could add new responsibilities to these. Antiviral resistance surveillance and research and nucleic acid sequence based strain characterisation are established and growing components of the Centre's activities and the TOR should reflect this. Consideration could also be given to expansion of the TOR to include respiratory viruses generally, given their public health importance to Australia and the region, and the demand for a focus of excellence and leadership in this key area.

The Centre's in-house research capability will be expanded. The incoming Director can be expected to develop and lead a research programme, shaped by their research interests and expertise, but within the boundaries of the need to inform and support the Centre's core activities. Resources are now available to recruit additional research staff, including senior staff with vaccine and antiviral expertise. Strengthening the Centre's already good collaborative research links will also be key. An academic focus for the Centre will be facilitated by a university senior academic appointment for the new Centre Director.

The Centre's leadership role can be strengthened. The Centre has a mandate as a Centre of excellence and leadership, in laboratory and therapeutic matters pertaining to influenza and potentially more widely to respiratory viruses generally. During the 2003 SARS outbreak, and the current influenza H5N1 avian outbreak, the Centre played a leading role with public health authorities and laboratories. However, it has in some respects been constrained in this by its relative isolation from viral diagnostic and reference laboratory practice. Integrated with a major reference laboratory at VIDRL, the Centre will have a very strong base on which to build an enhanced national leadership role in influenza and respiratory viruses, among the most important epidemic and emerging viruses.

The Centre's regional role will also be enhanced. In the past, public health laboratory based initiatives for our region have lacked visibility and have relied heavily on goodwill to compensate for lack of resources. The emergence of a

succession of new viral threats in the Asia Pacific region over the last 2 decades, culminating in the global SARS outbreak in 2003 and the current influenza H5N1 avian outbreak, have contributed strongly to a climate of support for regional engagement.

WHO laboratory networks in the region, such as the influenza laboratory network, represent a strong foundation on which to build initiatives for international surveillance, and support activities such as training, quality and reference testing. The Centre will have the status, the networks and the resources to play a pivotal role in this important strategic development.

Conclusion

We are presented with a tremendous opportunity – to combine the strengths of the Centre, its new host and their collaborators to realise greater capability than the sum of their parts. The climate is also favourable for strengthening networks and relationships both within Australia and in our region. There continues to be strong support for the Centre's enhancement from WHO and the Australian government. All of this augers well for the future of a revitalised Centre in facing the challenges that lie ahead.

Immunologist and vaccines expert Professor Anne Kelso has been selected as the new director for the Centre. Professor Kelso is the former director and chief executive of the Cooperative Research Centre for Vaccine Technology based in Queensland. Further details are available at www.health.gov.au

ASM Annual Scientific Meeting – Adelaide 2007

The scientific program for the Adelaide ASM conference to be held in July 2007 is now being organised.

It is important that members provide information on potential topics and speakers for symposia to the appropriate Divisional Chairs. Symposia are organised by NSAC and are divided into four main divisions. Each division has a Chairman who oversees the organisation of 10 themed symposia, each with three speakers. Each division also represents a number of SIGs.

Please contact the following Chairs with any suggestions for topics and speakers.

LOC Chair

Andrew Lawrence lawrencea@wch.sa.gov.au

Divisional Chairs

Division 1	David Ellis	dellis@adelaide.edu.au
Division 2	Tuck Weng Kok	tuckweng.kok@imvs.sa.gov.au
Division 3	Gupta Vadakattu	gupta.vadakattu@csiro.au
Division 4	Renato Morona	renato.morona@adelaide.edu.au

Division 1 – Medical & Veterinary Microbiology

Antimicrobials, Mycobacteria, Mycology, Mycoplasmatales, Ocular Microbiology, Parasitology and Tropical Medicine, Public Health Microbiology, Serology, Veterinary Microbiology, Women's and Children's Microbiology

Division 2 – Virology

Virology

Division 3 – General, Applied and Environmental Microbiology

Water Microbiology, Computers, Cosmetics and Pharmaceuticals, Culture Collections, Culture Media, Education, Food Microbiology, Laboratory Management, Microbial Ecology, Probiotic and Gut Microbiology, Rapid Methods, Students

Division 4 – Microbial Genetics, Physiology and Pathogenesis

Microbial Physiology, Molecular Microbiology