The WHO Collaborating Centre for Biosafety in Microbiology

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The World Health Organization (WHO) Collaborating Centre for Biosafety in Microbiology has been established at the Victorian Infectious Diseases Reference Laboratory (VIDRL) for over 2 decades and played a significant role in the development of the WHO Laboratory Biosafety Manual [1] and the WHO Biorisk Guidelines [2]. It has also contributed to WHO's international biosafety programmes and to the raising awareness of biosafety in Australia.

Margery Kennett was a member of the WHO Biosafety Advisory Group (BAG) when the *WHO laboratory biosafety manual* [1] was developed. This publication is the basis for safety in microbiology laboratories in most countries around the world and has been translated into a number of languages. More recently, WHO has extended its guidelines into biorisk management, which arose from a consultation held in Lyon in 2004. The Biorisk Guidelines can be downloaded freely from the WHO website [2].

More recently, the Collaborating Centre has been contributing to the development of the WHO biosafety train-the-trainer modules and to the development of guidelines for the assessment of risk associated with laboratory work.

Biosafety training

Biosafety training and awareness raising has become a very important role for the Collaborating Centre. The Centre has been involved in training courses held in Beijing (five in total) and in Tehran for the Eastern Mediterranean region of WHO. Two were awareness raising workshops for senior laboratory officials and for government officials to put biosafety as a significant issue. The others have dealt more specifically with biosafety in the laboratory and with the construction and design of biocontainment laboratories.

In addition, with the support of the Australian Department of Health and Ageing, the Collaborating Centre has produced a new video on working safely at a Class II Biological Safety Cabinet (BSCIIs). This video can be downloaded free from the VIDRL website [3]. The correct usage of BSCIIs is critical to the protection of staff from infection, and yet we find that many do not know how to do this safely and also that many BSCs are incorrectly sited within the laboratory.

Roles in the WHO BAG

As well as providing advice on the guidelines, membership of the BAG involves expert consultation, support of the training roles of WHO and involvement in inspection and investigation roles related to biosafety. Tony Della-Porta was involved in the investigation of the SARS coronavirus accidents that occurred in Singapore and in Taiwan in 2004, and Mike Catton was part of the BAG's review of the accident in China the same year. Tony has also been a member of the inspection teams that visited VECTOR in Novosibirsk, Russian Federation and the Centres for Disease Control and Prevention (CDC) in Atlanta, USA. These two facilities are the only two that hold and carry out research on smallpox virus. The World Health Assembly requires these two facilities to be regularly audited.

Special joint meetings of the BAG, WHO Polio Eradication programme staff, the CDC and other experts were convened by WHO in 2004 and 2006 to consult on polio-related biosafety issues in the post polio-eradication era. Development of a biorisk management standard for polio vaccine production and other essential polio facilities was begun. Mike Catton represented the Centre in these initiatives.

The BAG has met a number of times to plan the role of the train-the-trainer programme, which is aimed at training people who

can then roll out biosafety training programmes in their countries. Both Mike Catton and Tony Della-Porta have participated in these meetings.

CWA for biorisk management

A few years ago Canadian Health, in collaboration with WHO, American Biosafety Association (ABSA) and the European Biosafety Association (EBSA), commenced the development of a new international standard for the management of biosafety. This lead to an agreement with the European Commission and the European Committee for Standardisation (Comité Européen de Normanisation – CEN) for the development of the *CEN workshop agreement on laboratory biorisk management* [4]; this was published this year as CWA 15793.

There were 79 participants from 24 countries involved in this process during 2007. There were three workshops where this Standard was developed and then a final vote of the participants to approve the document. This is not a technical Standard like *Safety in Laboratories. Part 3. Microbiological aspects and containment facilities,* AS/NZS2243.3:2002 [5]. The new CEN Standard does not replace country Standards, regulations and guidelines, but puts in place a management approach which can be used to demonstrate that the requirements have been met. It is a management Standard which uses the continual improvement process of Plan, Do, Check and Act (PDCA) principle.

The CWA will remain in place for 3 years, after which it can be converted into an ISO Standard. It is hoped that this new Standard will be widely adopted and enable certification against this Standard.

WPRO activities

WHO is divided into a number of regions, the most significant to Australia are the Western Pacific Regional Office (WPRO) and the South East Asian Regional Office (SEARO). WPRO covers some of the following countries: China, Malaysia, the Philippines, Australia and New Zealand. SEARO covers some of the following countries: India, Indonesia, Thailand.

WPRO and SEARO are working together in the Asia Pacific Strategy for Emerging Infectious Diseases (APSED), which has a sub-section on biosafety. The goal of this is that "all countries in the region will have the minimum capacity and capability to implement effective biosafety practices in laboratories dealing with infectious diseases programmes, by 2010".

As part of the process, WPRO has formed a Biosafety Consortium (BioSC) whose initial members include Australia, Japan, Singapore, WHO Geneva and WPRO. This group is charged with facilitating the above goal – one of the methods being discussed is the setting up of a Green Light Committee to facility advice to countries constructing and operating biosafety Level 3 laboratories and facilitating a process of inspection/certification. One of the proposals getting active consideration is to recommend that laboratories adopt CWA 15793.

Australia activities

As part of its collaborating centre role, VIDRL has been providing training in laboratory biosafety to groups within WPRO, including the WHO Influenza National Disease Centres and a group from China. In addition, the video on safely using BSCIIs was produced and made freely available. Finally, the WHO Collaborating Centre has assisted in the setting up of the Australian Biosafety Association.

Acknowledgements

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Dr Mike Catton is Director, and Head of Virology at VIDRL a Victorian, national, and international reference laboratory. Mike's professional interests are in molecular viral diagnostics, and emerging viruses. He is a member of WHO's Biosafety Assessment Group, and has undertaken WHO consultancies around Asia. In 2003 Mike led a collaborative effort to develop Australian laboratory capacity for responsiveness to SARS. In 2007 his group jointly discovered a new arenavirus as the cause of a cluster of deaths among Victorian transplant patients.