

## **Does Australia need a national Centre for Disease Control?**

The first plenary session at the forthcoming Public Health Association of Australia Communicable Disease Control Conference in Canberra (4-6 April 2011) will be 'Does Australia need a CDC?' In this paper, The Australasian Faculty of Public Health Medicine of the Royal Australasian College of Physicians and the Public Health Association of Australia discuss the concept of an Australian Centre for Disease Control (ACDC) with the role of national scientific leadership of surveillance and control of current and emerging infectious diseases across the country and, as appropriate, in the neighbouring region.

The views expressed in this paper do not represent the formal policies of either the RACP or the PHAA. They are presented here in order to help stimulate the discussion at the forthcoming conference.

### **1. Summary of key concepts**

The aim of establishing an ACDC would be to provide strong central, expert driven leadership and coordination of national communicable disease control.

An ACDC could operate as the central leading organisation (the hub), in partnership with existing government and non-government agencies: a "Hub and Spoke" model. Key functions could include:

- National coordination of disease surveillance. Experts in communicable disease surveillance should lead the analysis and interpretation of notifiable disease information and the coordination of scientific effort;
- National leadership in communicable disease prevention programs e.g. National Immunisation Program, HIV and antibiotic resistance
- Specialist expertise in the investigation, coordination and management of nationally significant outbreaks of communicable disease or other significant related issues (e.g. adverse events following vaccination);
- Oversight and coordination of training and development of the disease control workforce; and
- Strategic contribution to the control of communicable diseases in the Australian Area of Interest (Western Pacific and Near North) in partnership with World Health Organisation regional agencies (SEARO and WPRO).

Such an agency would best be established through legislation to function as a national source of technical capacity separate to the existing Department of Health and Ageing (and jurisdictional equivalents). This 'Agency' should report through a CEO to a Board of eminent leaders in disease control and prevention and ultimately through the Board to the Federal Minister of Health. Appointments to the Board should be made by agreement between the Federal, State and Territory Ministers of Health, through the Australian Health Ministers' Conference (AHMC) and/or Council of Australian Governments (COAG) and in consultation with recognised leaders in disease control.

A framework for implementation and evaluation of this model should be established which takes into account the costs involved, measures of functional improvement in

disease control initiatives and particularly improvements in disease control outcomes at jurisdictional levels. This would include measures based around priority targets for disease control and would also involve consideration of current arrangements under the legislative framework of the *National Health Security Act 2007*.

## **2. Introduction & background**

Australia has a track record of positive outcomes in disease control. This extends as far back as Australia's impressive response to the 1918-19 influenza pandemic and leadership in the early days of the response to HIV-AIDS. However, the pressures of globalisation, travel and environmental change have resulted in a complex and rapidly evolving communicable disease agenda. Modern and future communicable disease threats require a much more robust response capability than can be delivered through current systems.

Although the Australian Government plays a role in disease control, there are limitations to its authority and ability to influence the traditional roles of the States and Territories in securing disease control outcomes. Currently, the Australian Government has powers under the *Quarantine Act 1908*, the *National Security Act 2007* and through its Office of Health Protection. The Communicable Disease Network of Australia (CDNA), with the support of the Office of Health Protection, provides the coordination, scientific analysis and advice required for communicable disease control to the Australian Governments. The CDNA is comprised of Australian Government, State and Territory officials, representing their jurisdictions, as well as representatives of affiliated organisations (e.g. the Department of Agriculture, Fisheries and Forestry and the Australian Defence Force). The CDNA reports to the Australian Health Protection Principal Committee (AHPPC). The AHPPC may exert operational control in the event of what it considers to be a national communicable disease emergency

Numerous other agencies contribute to the control of communicable disease in Australia. These agencies include the National Health and Medical Research Council (NHMRC), National Centre for Immunisation Research and Surveillance (NCIRS), National Centre in HIV Epidemiology and Clinical Research (NCHECR), Australian Animal Health Laboratory (AAHL), the Australian Commission for Quality and Safety in Health Care (ACQSHC), Australian Quarantine Inspection Service (AQIS), Australian Institute of Health and Welfare (AIHW) and numerous jurisdictional laboratories operating as part of the Public Health Laboratory Network (PHLN). Universities and private sector organisations such as CSL make important contributions in vaccine research and development. However, while essential to the performance of disease control activities their role and influence is not coordinated or subject to a higher degree of strategic control. No single national agency is responsible for achieving outcomes across the wide range of communicable disease issues.

## **3. Central argument**

Australia is unique in being the only Organisation for Economic Co-operation and Development (OECD) country without a recognised separate authority for the national scientific leadership and coordination of communicable disease control. Different nations have different models to deliver this function (see section 4), but all are comprised of technical professionals with a degree of independence from the political process. Significant benefits and achievements are attributed to the United States Centers for Disease Control (CDC) in the literature<sup>1,2</sup> and both the US and United Kingdom Centres attest to their successes in their annual reports.<sup>3,4</sup> The European Centre for Disease

Control (ECDC) is a recently established supra-national agency. Within 2 years of commencing operations, the ECDC was favourably evaluated as providing benefits to the European Community.<sup>5</sup> Generally speaking, in developed countries, Centres for Disease Control have made a favourable contribution to the health and wellbeing of the population.

The call for an ACDC has been a longstanding one.<sup>6</sup> Rubin *et al* heralded the benefits of local coordination and dedicated training for public health disease control based on the US CDC training program when Public Health Units were established in NSW in 1990.<sup>1,7</sup> Recently, there have been a number of public expressions of interest in the establishment of an ACDC and in ensuring an ongoing commitment to training in communicable disease epidemiology.<sup>8,9</sup> A number of people with an interest in the outcome of an ACDC have re-commenced advocacy in medical and government fora.

Renewed advocacy for an ACDC has notably been driven by the results of critical reflection upon recent national disease control incidents.<sup>8,10</sup> The national response to the 2009 H1N1 Influenza A pandemic demonstrated that the required resources and leadership far exceeded what was available to the Australian Government and CDNA.<sup>10</sup> This led to large demands upon the public health workforce in the States and Territories. The ability of the public health workforce to 'surge' to meet these demands was not sustainable. Many jurisdictional representatives on CDNA, tasked with providing technical advice, were also required to lead and manage the response. An ACDC is necessary to provide national technical leadership and coordination of emergent public health responses, including the efficient communication of technical information and strategic management of the public health workforce to provide national surge capacity. The outcome would be improvements in the technical input to decision making in response to national disease threats and an improved capability to conduct the national response.

The identification in April 2010 of febrile convulsions in young children following administration of seasonal influenza vaccine highlighted the need for timely identification of new adverse events following immunisation, and the need for expert driven investigation of an emerging health issue.<sup>11</sup> An ACDC would be responsible for the routine surveillance of Adverse Events Following Immunisation, timely identification of signals arising from this surveillance and the technical leadership and coordination of the investigation and response to identified concerns. This would increase the potential for highly efficient public health investigations with the optimal allocation of scarce public health resources and timely reports to Government and the community.

The examples cited above are evidence of the overall lack of national capacity to address communicable disease issues in a strategic manner within the context of an inclusive and sustainable program. Currently the AHPPC, the Office of Health Protection, Department of Health and Ageing (DoHA) and the CDNA jointly manage the national communicable disease agenda. Among the CDNA's tasks are the development of national documents (e.g. specific disease control guidelines) and monitoring particular disease control priorities. The CDNA relies on States and Territory input with some Australian Government administrative support. Its functions and deliverables are limited by this dependence. An ACDC, as a central core of technical expertise, would offer CDNA in particular a strong 'technical' arm to assist with deliverables such as guidelines or technical reports. It would also need to operate within a supportive legislative framework to deliver a highly effective and efficient program of communicable disease control.

There are a number of important communicable disease issues which are outside the immediate scope of the CDNA. Their common feature is the lack of national leadership and ownership which leads to a piecemeal approach rather than a coordinated drive for

solutions. At the very centre of the argument for an ACDC is the absence of a national strategic communicable diseases plan and the agency that would be responsible for the delivery of the coordinated programs and increase the national capacity for communicable disease control. A prime example is the lack of national leadership and recognition of the importance of emerging antibiotic resistance and the requirement for a public health led approach. In this context an ACDC would work with organisations such as the Australian Commission on Quality and Safety in Health Care to ensure coordination of strategies aimed at improved quality of clinical care and communicable disease control. An ACDC would also provide the leadership to meet the ongoing challenges in sexual health of increasing rates of HIV, chlamydia, gonorrhoea and syphilis infections. Local sexual health clinics and leading academic institutions such as NCHECR can describe the emerging issues but they need a national level 'home' to ensure that issues are taken up as they are identified and that solutions are conducted nationwide within a structured framework.

Such outcomes are also desirable in other public health programs. The National Immunisation Program is faced with a number of decisions regarding the introduction of new vaccines, changes to the current vaccination schedule and the task of revision of the Australian Immunisation Handbook. While the technical input is available through the Australian Technical Advisory Group on Immunisation, the national leadership, infrastructure and logistics to plan, develop and evaluate a national program and to drive changes such as an all of life vaccination register are lacking. An ACDC would be responsible for coordinating the inclusion of technical advice with the implementation, evaluation and subsequent improvements to the program.

Recognising the benefits of coordination also recognises that much of the communicable disease control agenda is currently divided across the nation into specialty sector interests. Universities and laboratories have had much to gain from this diversified and 'devolved' (read fragmented) approach to disease control. However, it should be understood that the standing up of an ACDC would provide practical benefits to those already working within the existing clinical/technical/research environments. Furthermore their agendas are generally weighted to research and do not contribute to timely surveillance for intervention activity.

The workforce that supports communicable disease control would benefit from the establishment of an ACDC. There are nationwide problems in recruiting throughout the health system but especially in training the disease control workforce. This workforce has benefited from the establishment of a dedicated program to deliver a trained workforce. The Australian National University ran a very effective Masters in Applied Epidemiology program for more than 20 years and the University has only recently been advised that funding would be discontinued. Other workforce training in communicable disease control has been achieved through traditional campus course masters in Public Health and jurisdictional training programs (eg NSW Public Health Officer Training Program).

The loss of the MAE program and defunding of the Public Health Education and Research Program (PHERP) represents a serious threat to the maintenance of a high quality trained workforce in communicable disease control, reduces the outbreak response surge capacity and will create a gap in workforce training from 2012. The management of this workforce gap has no national ownership or perceived solution to what is ultimately an issue of national importance. There would be benefits in having a national agency take leadership on the whole issue of workforce development for what is a specialised role (disease control). The establishment of an ACDC would provide the 'home' for the oversight, coordination and management of this issue.

The OzFoodNet program is an example of a well resourced, nationally coordinated program which addresses many of these aforementioned requirements, albeit for the control of foodborne disease. It operates within a framework of central and jurisdictional centres of expertise and through its established program of surveillance and interaction with centres of laboratory expertise and international authorities serves as a national epidemiological resource and a national repository of educational expertise for the investigation and management of foodborne disease in Australia. It was evaluated positively in 2002 and continues to provide an excellent service and resource to this day.<sup>12</sup> It provides the template for the construction of similar programs to address areas such as respiratory disease, blood borne virus infection and health care infection.

OzFoodNet provides a current working example of the most suitable way to address the requirement for technical leadership and coordination of a national communicable disease control program in Australia. This would be through the use of a 'Hub and Spoke' model which would complement the existing framework for communicable disease control in the States and Territories. This would provide central, expert driven leadership and coordination of a national communicable disease control 'program', enhanced transparency in decision making and efficient use of expertise. It would provide the necessary base for nationally enhanced capability in surveillance, workforce development and tasking, identification and addressing the key issues and the conduct of outbreak response measures at a national level.

The most appropriate way to support the authority of an Australian Centre for Disease Control would be through legislation which enables it to function as a national source of technical capacity separate to the existing Department of Health and Ageing (and jurisdictional equivalents). The importance of providing independent 'arm's length' advice to government in health related matters has been recognised recently with the proposed legislation for establishing the Australian Commission for Quality and Safety in Healthcare as an independent entity.

In the event of establishing an independent communicable disease control authority the reporting framework should be through a CEO to a Board of eminent leaders in disease control and prevention and ultimately through the Board to the Federal Minister of Health. Appointments to the Board should be made by agreement between the Federal, State and Territory Ministers of Health, AHMC and/or COAG and in consultation with recognised leaders in disease control.

#### **4. Examples from other settings / countries / systems**

Comparable economies to Australia, such as the UK, USA, Europe, Canada, and China all have a central agency to lead and coordinate disease control initiatives. Indeed no other OECD nation tries to do that without having a national authority, comprised of technical professionals with a degree of independence from the political process.

The United States has a huge investment in disease control through its Centers for Disease Control and Prevention (<http://www.cdc.gov>). The CDC has been established for over 60 years and has grown from modest origins to an international and national leader in disease control. It has formed the national platform to develop and expand programs which have made huge contributions to the health of the US and the world. These include national immunisation programs and processes such as the Advisory Committee on Immunization Practices. Where there were gaps, such as in development of public health tools and responses to the threat of bioterrorism, the CDC led the national development and implementation of the solution. Part of the reason for their influence and success has

been their strong leadership role in workforce training. More than 2,500 trained disease investigators, products of their Epidemic Intelligence Service, have made enormous contributions at local, national and international levels to disease control.<sup>13</sup> The US CDC has enormous influence as a result of the networks created by its graduate workforce, it is well funded and with its strong links to academic research uses its national leadership role and strong operational focus to drive research and implementation of its findings.

The United Kingdom's national Health Protection Agency (<http://www.hpa.org.uk>) also builds on a long standing tradition of national technical leadership in disease control.<sup>14</sup> In 2002, partly as a response to the emerging threats of bioterrorism but in recognition of the growing complexity of communicable disease control, surveillance and response the UK established a national Health Protection Agency which was designed to strengthen their national surveillance systems and response capability, address the gaps of a lack of an integrated approach to all aspects of health protection and provide formal support for the field work carried out by their local public health officials.<sup>15</sup> While the recently elected UK government has announced its intention to move the HPA into the Department of Health, the decision appears to be based more on ideological and financial grounds than on any objective measurement of performance of this highly respected model for disease control.<sup>16</sup>

Perhaps the most pertinent example in terms of comparable legislative frameworks, Canada's Public Health Agency (<http://www.pha.caspc.gc.ca>) was established in the aftermath of the severe acute respiratory syndrome (SARS) outbreak. The outcome of the enquiry into Canada's management of SARS reflected on the absence of national health goals and strategies and the problems faced by public health professionals operating inside a very large health department with a highly process-oriented culture geared to meeting the political issues of the day. Despite the presence of good regional public health response capability, the strong recommendation made in the report, subsequently accepted, was to vest the health protection functions in an 'arm's length' agency to enhance the credibility and independence of public health activities.<sup>17</sup> The result of the SARS outbreak was that the Government of Canada created a new Canadian Agency for Public Health, led by a Chief Public Health Officer of Canada.<sup>17</sup>

The European Union has set up a supranational European Centre for Disease Prevention and Control ([http:// www.ecdc.europa.eu](http://www.ecdc.europa.eu)). It was established in May 2005 in response to the recognition of new emerging diseases such as SARS and avian influenza and to strengthen Europe's defences against infectious diseases.<sup>18</sup> An external evaluation in 2008 commented on the importance of its role as an independent centre of scientific excellence in disease control.<sup>5</sup> While the European political context presents different challenges to the Australian context, the model of a Centre for Disease Control at arms length from the political process was evaluated positively in the report.

All of these countries have recognised the value of a strong technical central national (or supranational) agency at some distance from the political process in the control of communicable disease.

## **5. Conclusion**

Current and emerging communicable diseases in the changing and complex environment of the 21<sup>st</sup> century pose real risks for Australia and its near neighbours. Risks that could be mitigated by the development in Australia of a national centre of excellence to:

- collate, analyse, interpret, and disseminate national scientific advice in communicable disease control;
- identify and investigate emerging issues of national significance ;
- coordinate gathering emergent data;
- provide national technical leadership;
- provide national leadership of important disease control programs (e.g. Immunisation)
- produce national advice, protocols and guidelines;
- monitor environmental risks using a systematic approach;
- lead and coordinate multi-jurisdictional communicable disease emergencies/outbreaks/incidents; and
- ensure a strategic approach to the training of a strong communicable disease control workforce that can provide surge capacity when required.

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