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Regional Networks: The Case for Integration and Coordination¹

Submitted by Australia

I Introduction

1. Timely and detailed regional surveillance for infectious disease outbreaks or epidemics is essential to Australia's security. This is particularly so for diseases which may have major impacts on health and international trade, and also for the ability to detect and recognise the possible deliberate release of an infectious agent. Most crucial is the ability to detect novel or unusual diseases quickly and specifically so that surveillance is a real-time process. This national objective requires a number of supporting systems including a network of high quality laboratories throughout the region with an expertise covering a wide range of infectious agents, and political will with respect to support of the laboratories and the rapid release of data collected by the laboratories.

II Current international surveillance activities.

2. A number of surveillance programmes have been established in the Asian-Pacific region in recent years, but the majority have been of limited value.

3. The most important and effective surveillance activities are those associated the World Health Organization (WHO) through the two regional offices (Western Pacific Regional Office, WPRO; and South-East Asian Regional Office, SEARO), and the various WHO country offices. Information gathered by WHO is collated in the regional office and forwarded to the Office of Alert and Response Operations at WHO headquarters in Geneva. Action with respect to verification and assistance with control is most commonly initiated by the regional office. A regional version of the Global Outbreak Alert and Response Network (GOARN) partnership is currently being established

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by WPRO with the acronym ROARN, and it is expected that other regional offices will follow. Indeed the recent MOU between WPRO and SEARO augurs well for improved and broadly based surveillance throughout the two regions.

4. Other networks of varying size have been set up to cover specific groups of countries. The largest regional network is the Asia Pacific Economic Cooperation (APEC) Emerging Infections Network (APEC-EINet) which is based in the School of Public Health and Community Medicine at the University of Washington, Seattle (<http://depts.washington.edu/apecein/about/index.htm>) and which includes most Pacific Rim and Southeast Asian nations, including Australia. This network was established by the APEC Industrial Science and Technology Working Group and has strong support from the US Government through the Office of Global Health Affairs in the Office of the Secretary, Department of Health and Human Services.

5. Although this network helps to disseminate data through its website, it appears to have little involvement in real-time infectious disease surveillance. It does provide some library resources through links to standard sources such as PubMed and WHO websites, but disease data is limited and not updated regularly.

6. The Pacific Public Health Surveillance Network (PPHST) (<http://www.spc.org.nc/phs/>) was established by the Secretariat of the Pacific Community in collaboration with WHO-WPRO to collect and disseminate public health information from and to member island nations in the Pacific. Once again, the collection process is not a real-time surveillance system, but the data obtained is useful for public health planning.

7. The ASEAN Disease Surveillance Net (<http://www.asean-disease-surveillance.net/>) was established in 2002 by the United States Naval Medical Research Unit (NAMRU-2) as an infectious diseases surveillance network, after an earlier surveillance meeting of a broad range of infectious disease specialists in 2000. It has a secretariat in the Indonesian Ministry of Health, and data is collected from the ten ASEAN countries? namely Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam? and from China, Japan and Korea (ASEAN+3). The secretariat has developed a list of experts and recognises centres of excellence in the participating countries. It posts disease information on its website. Its ability to record and disseminate real-time surveillance data is not clear but the website is updated regularly and in a timely manner. The degree to which member countries contribute information is uncertain as there is some resistance within the region to providing infectious diseases data for international use. Thus its real-time usefulness is difficult to quantify and is yet to be tested.

8. The Mekong Basin Disease Surveillance project was set up in 1999 by WHO and the Rockefeller Foundation to undertake outbreak investigation and training in the six countries in the basin (Thailand, Cambodia, Laos, Vietnam, China, and Burma). However, it seems to have a rather uncertain role with respect to surveillance, and it does not have real-time usefulness.

9. The final surveillance programme, the Southern China Surveillance Network has not been established yet, but will be largely confined to southern areas of the Peoples Republic of China including Hong Kong SAR.

III WHO regional surveillance plans

10. During the recent outbreak of Severe Acute Respiratory Syndrome (SARS), WHO established a 'Virtual Laboratory Network' based on certain members of the Global Influenza Network, which met daily through teleconferencing. This was extremely successful in defining the aetiological cause of the outbreak, and played a crucial role in the control of the outbreak. It demonstrated that virtual networks have a role to play in responding to outbreaks? especially those of unknown aetiology? and that such an arrangement can be built on existing networks quickly and effectively. However, virtual networks only have a role in response to disease outbreaks, not in the surveillance and detection of outbreaks.

11. WHO has a significant surveillance operation through the Department of Infectious Diseases Surveillance and Response in Geneva, mediated by its Office of Alert and Response Operations (ARO). ARO obtains its information from many sources, with outbreak alerts coming from, principally, either the Global Public Health Information Network established by Health Canada, or from WHO Regional Offices and Country Offices. Thus, much of the raw surveillance information comes from or through regional offices.

12. This raw information is often very sketchy and uncertain, and before it can be acted on, needs to be confirmed and verified. On a global scale, this is done by either ARO speaking to the relevant national authorities in the country concerned, or through the WHO regional or country offices. Verification might also be done with the help of institutions in partnership with WHO, such as the Global Outbreak Alert and Response Network (GOARN). On a regional basis, this would be WPRO and/or SEARO and the specific country office, and aided by members of the GOARN partnership.

13. WPRO however is working to establish a regional partnership? a Regional Outbreak Alert and Response Network (ROARN). WPRO envisage that ROARN will be the regional equivalent to the GOARN. That is, it will be a partnership of institutions and NGOs able to be called on for personnel and/or financial assistance for verification and control of major outbreaks of potential public health significance in the region.

14. One aspect of both ROARN and GOARN of particular interest to Australian expectations for regional surveillance is the plan to initiate a laboratory sub-network to support GOARN. The plan here is that the sub-network should be regionally based and composed of laboratories with specific expertise for a wide range of infectious agents. It will include laboratories with BL1, BL2 and BL3 facilities.

15. A second overarching network composed of BL3 and BL4 laboratories will be coordinated by the Office of Alert and Response Operations (ARO) at WHO-HQ in Geneva and will provide support to the regional laboratory networks.

16. Before initiating the laboratory network there are two pre-requisites that must be satisfied. First of all it will be necessary to collate a list of all laboratories with the requisite levels of expertise

to be considered for inclusion in the network. Then, there must be solid regional commitment to effect ongoing resources for building the capacity and supporting the network. With respect to the former, it will be necessary to ensure capability and reliability through a quality assurance programme to which all contributing laboratories must contribute on a regular and ongoing basis.

17. For the latter, resources will be needed to provide communication tools, regular inter-laboratory contacts, equipment, and maintenance materials, plus the ability to include surge capacity. The laboratory network will also need to be in a constant state of readiness, possibly requiring regular exercises with colleagues in other laboratories. Preliminary seed funding is being requested from the US National Institutes of Health.

18. The BL4 laboratory network partly exists today in that the directors of most BL4 laboratories meet informally already, the last meeting was held in March 2004 in conjunction with the recent International Conference on Emerging Diseases in Atlanta.

IV Other relevant regional agencies

19. Other regional agencies with interests or involvements in international disease monitoring and surveillance are the US armed forces institutes, most notably NAMRU-2 in Jakarta and the US Army detachment in the Armed Forces Research Institute for Medical Science in Bangkok. Most recently, the Regional Emerging Diseases Intervention Centre (REDIC) opened in Singapore, funded by the US Department of Health and Human Services and backed by the US Centres for Disease Control and Prevention (CDC) and the Food and Drug Administration. REDIC will have the investigation of emerging diseases as its central role, and will be involved in training, disease outbreak investigation, and development of diagnostic reagents. Further, CDC has a number of offices throughout the region with staff available to assist in disease investigation.

V Possible Australian activities and contributions

20. Australia has been active indirectly in disease surveillance in a number of ways, although most have been informal arrangements between individuals or laboratories. Consequently, several institutions have been partners in the GOARN. A number of collaborating centres in Australia have assisted in disease diagnoses and in laboratory training, and a large cohort of Australian infectious disease specialists, microbiologists, laboratory scientists, epidemiologists, infection control nurses, and other relevant specialities have been involved in regional activities concerned with disease diagnosis, public health, and control strategies. Furthermore, AusAID has provided support to related activities.

21. There is a clear need for Australia to join WHO (WPRO, SEARO, and HQ) in assisting the development of both the regional laboratory network and the global network? both are part of the same, and there is probably greater financial support available at this time for regional initiatives than for central/global initiatives. Australia has the expertise and the health infrastructure systems to be an important contributor in both personnel and aid. Australian surveillance systems are some of the best globally, and many of the epidemiologists and microbiologists involved in surveillance, laboratory diagnosis, and outbreak investigation are known and respected in the region. It is clearly

in the best interests of Australia to be a major player in regional surveillance and to ensure that the surveillance mechanisms are the best available.

VI Conclusion

22. There is a plethora of disease surveillance networks in the Asia-Pacific region, although many do not have a real-time capability. In this region, other networks, competent organisations, facilities and experts are not optimally connected. As a complement to the WHO, Australia believes that an integrated regionally based surveillance network, including a laboratory sub-network and experts on-call would be of great benefit and should be encouraged.
