



EVALUATING A DECADE OF AUSTRALIA'S EFFORTS TO COMBAT PANDEMICS AND EMERGING INFECTIOUS DISEASES IN ASIA AND THE PACIFIC: ARE HEALTH SYSTEMS STRONGER?

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Emerging infectious disease (EID)

The World Health Organization (WHO) defines an EID as a disease that has appeared in a population for the first time, or that may have existed previously but is rapidly increasing in incidence or geographic range. The majority (75 per cent) of EIDs are zoonoses—animal diseases that can infect humans. Some of these, such as avian influenza, have potential to mutate to allow transmission between people and spread quickly around the world.



Women's roles in small-scale animal production and food preparation increase their risk of exposure to EIDs from raw animal products. They also play a lead role in protecting the health of their families. Gender is thus a significant contributor to EID exposure and vulnerability. The photo shows women selling poultry at a market in Hanoi, Vietnam in 2005. Photo: Lorrie Graham (from DFAT photolibrary).

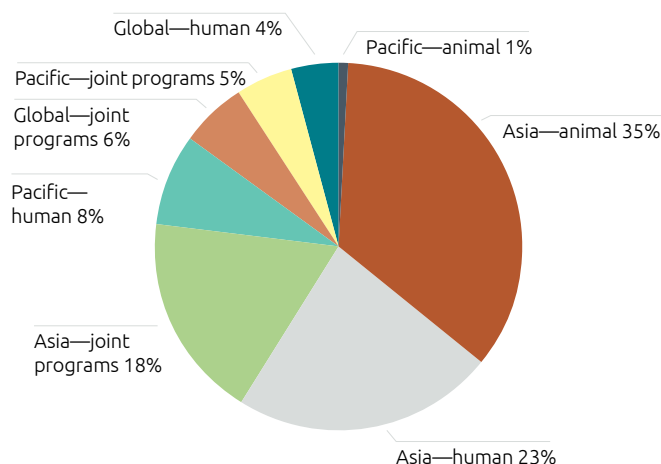
ASIA IS RECOGNISED AS AN EPICENTRE FOR EIDS WITH PANDEMIC POTENTIAL, SUCH AS AVIAN INFLUENZA.

Risk factors include the close proximity of large populations of people and animals, increased cross-border travel and trade, and weak public health systems with variable capacity to detect and contain disease outbreaks. The threat of a new pandemic originating in Asia is a serious risk to global and regional health security, economic development and trade.

In contrast, the small Pacific island countries and territories have fewer people and fewer animals of potential zoonotic risk, but are at risk of imported zoonoses. Pacific health systems struggle with the double burden of non-communicable and infectious diseases. Also, wider population dispersion means that delivering health services in the Pacific is more expensive and logistically difficult than in Asia.

Australia spent \$194 million between 2006 and 2015 helping countries in Asia and the Pacific combat EIDs such as avian influenza, swine flu and rabies.

Estimated allocation of Australia's EID investments by human and animal health sector and region, 2006–15



Investments were guided by two previous pandemics and emerging infectious diseases (PEID) strategies that aimed to strengthen the underpinning animal and human health systems involved in the EID response. The focus was mainly on efforts to improve human and animal disease surveillance systems, health workforce epidemiological capacity, laboratories, and leadership and governance for EID work.

The Office of Development Effectiveness (ODE) commissioned an evaluation to identify lessons from this past assistance to inform decision-making about future DFAT investments and policy engagement on regional health security.

DFAT's *Health for Development Strategy 2015–2020* recognises that a region's health security is determined by the strength of country-level health systems within that region. The strategy has the dual objectives of building regional capacity to respond to emerging health threats, and building country health systems that are responsive to people's needs.

The evaluation examined the implementation characteristics and effectiveness of Australia's past investments in strengthening the health system capabilities required to implement WHO's International Health Regulations (IHR, 2005) and the World Organisation for Animal Health's (OIE) animal health standards and Performance of Veterinary Systems (PVS) evaluation tool. These are the principal global instruments for prevention and response to the international spread of infectious diseases.

The evaluation also examined progress in adopting a One Health approach (joint action by the human and animal health sectors to address zoonotic disease transmission) and the approaches to community engagement and gender taken in Australia's investments.

Summary of evaluation findings

In human health, Australia has contributed to substantial improvements in surveillance and in the availability, timeliness and sharing of EID data across the region.

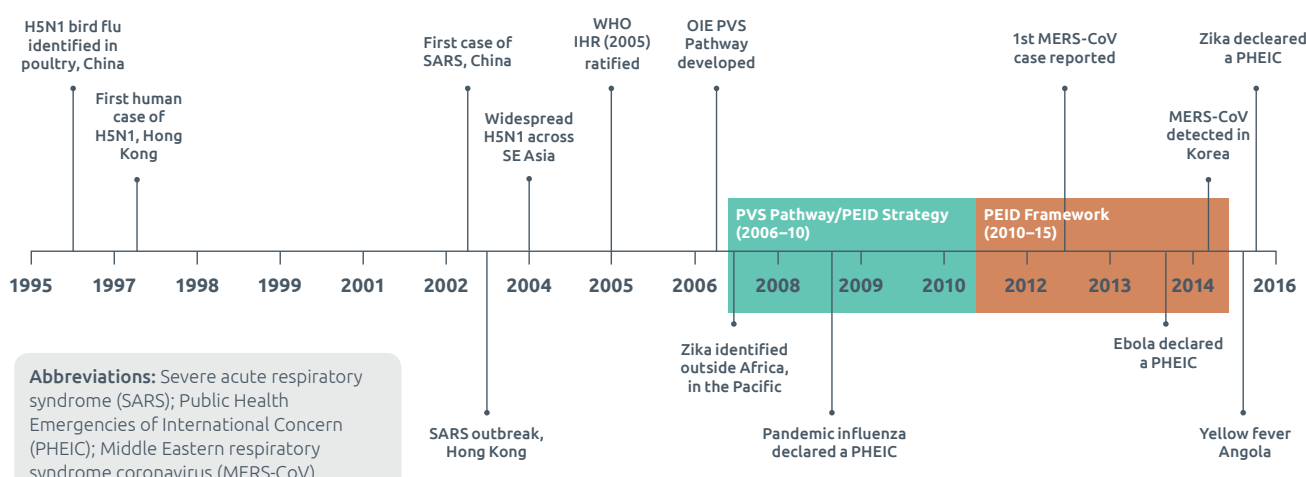
These outcomes came from efforts on a number of fronts—support for field epidemiology training, surveillance systems and laboratory networks; and improved preparedness and response planning by ministries of health. Compared to a decade ago, there is now greater awareness of EIDs at community and government levels. However, capacity to use this surveillance data for policy, planning and response has not kept pace with its increased availability.

Future investments need to move beyond narrow technical areas and address the policy and institutional constraints to improving EID preparedness and response capacity.

The outcomes achieved in animal health were more modest, largely because veterinary services in the region are weaker than human health services. The primary drivers for development of animal health systems are economic—livestock production and trade—and these are stronger in South-East Asia than in the Pacific. Thus Australia's investments in South-East Asia were able to build on existing (although still underdeveloped) capacity and laid a modest platform for future disease outbreak responses. In the Pacific, there was little evidence of improvement in animal health systems because of the lack of foundation to build upon.

In animal health, the strongest outcome was the establishment of a regional disease control model for foot and mouth disease (FMD) in South-East Asia. Although FMD is not a zoonosis, the model has

Timeline of notable public health events, 1996–2016, and Australia's PEID strategies



provided a foundation for control of zoonotic diseases. The FMD regional approach of strengthening veterinary systems and outbreak investigations was adapted as a basis for ASEAN animal disease control strategies for avian influenza and rabies.

There was also some strengthening of animal health surveillance systems. In Indonesia, the iSIKHNAS surveillance model has achieved impressive engagement with farmers and strong ownership by veterinary services in the pilot areas. From an initial focus on 44 districts, by May 2015 iSIKHNAS was being used by almost 5000 people in 382 districts across 33 provinces (see map below).

The evaluation found that although the One Health logic is sound, the different capacities and jurisdictions of the human and animal health sectors make it difficult to implement. The best prospects for One Health approaches are in areas of common ground that threaten public health—such as avian influenza, rabies and antimicrobial resistance.

Communities have a crucial role in prevention, detection and response to disease. The evaluation identified a number of promising approaches to community engagement in DFAT's past EID investments—including support for village surveillance teams, biosecure farming, improved hygiene in markets and behaviour change communications. However, it was a struggle to get them institutionalised outside of disease outbreaks. A combination of broad-coverage public communications on disease prevention, and more resource-intensive community-level interventions when required, is likely to produce positive results.

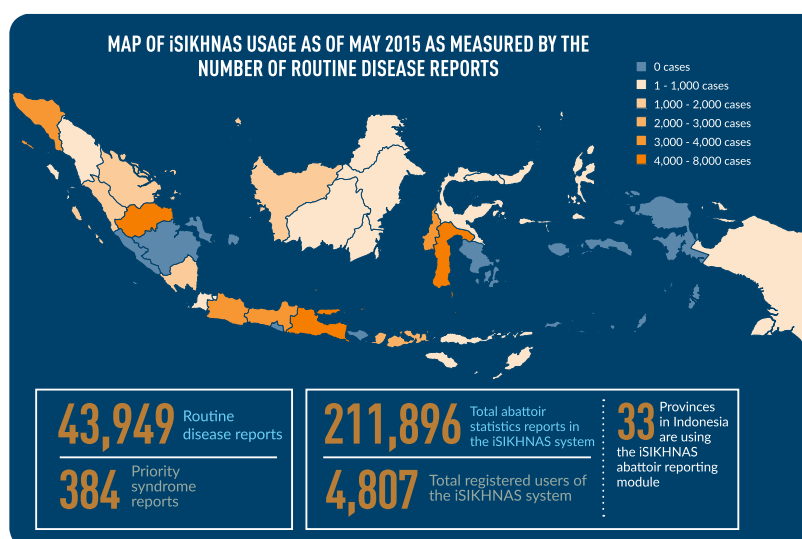
It is now better understood that gender is a significant factor in EID exposure due to the roles of women in small-scale animal production and food preparation,



Don't touch chickens! Cambodia, Khmer display banner. Source: one of the communication tools developed by UNICEF and supported by AusAID for translation into local languages in affected countries.

protecting the health of their families, and in the health workforce. However, the links between this conceptual understanding and gender outcomes still need to be strengthened. We found good examples of gender analysis and research, but limited evidence of implementation or results. DFAT's future investments will need to make programs more accountable for ensuring gender differences and their effects are addressed.

A challenge for efficiency in DFAT's future investments will be to ensure there are sufficient qualified DFAT staff to engage in health diplomacy and progress a health security agenda. The appointment of an Ambassador for Regional Health Security in June 2017 was an important step in addressing this challenge. The Ambassador will develop partnerships with other governments and advance Australia's interests by focusing global attention on the needs of the Asia-Pacific region, strengthening country-level health systems and preparing the region to respond to emerging health threats.



Australia has contributed to the development of Indonesia's National Animal Health Information System (iSIKHNAS) which supports animal health and livestock production. The system includes disease notifications, laboratory test results, surveillance and vaccination programs, reproductive status, animal movements and identification. It can be 'stepped up' at times of zoonotic EID outbreaks.

THE EVALUATION HIGHLIGHTS A DECADE OF PROGRESS IN IMPROVING REGIONAL HEALTH SECURITY.

Since the slow response to SARS in 2003, Australia has contributed to substantial improvements in surveillance and the sharing of data on EID threats in the region. However, recent events have highlighted the fragility of these gains. A WHO assessment following the 2014–15 Ebola crisis in Africa found that most low and middle-income countries in Asia and the Pacific do not yet have the capacity to respond adequately to events of public health concern. The evaluation underlines the need for DFAT's future health security investments to be better integrated with the health systems of partner governments than was the case in the past. It also underlines the need for a differentiated approach that takes into account the differences between animal and human health systems, between the Pacific and South-East Asia, and the constraints to implementing a One Health strategy.

RECOMMENDATIONS

Recommendation 1

That in designing future EID investments, DFAT require a clear articulation of how these investments will strengthen country health systems.

In the Pacific, where DFAT has significant bilateral health engagement, regional EID investments should clearly complement and seek to strengthen country-level efforts. In other countries, where DFAT may not have strong health engagement, DFAT should work through multilateral and regional partners who have an established and respected country presence in health.

Recommendation 2

That DFAT make targeted investments in animal health with the following features:

- i. Support FMD control in South-East Asia as a priority disease for economic development and trade, with benefits for zoonoses control more broadly.
- ii. Build on past experience in strengthening animal health surveillance in South-East Asia to support regional cooperation, better use of data to improve planning and response, and sharing of data on priority zoonoses with the human health sector.
- iii. Limit future Australian assistance for animal health in the Pacific to biosecurity and quarantine.

Recommendation 3

That the design of new DFAT regional health security investments include gender outcomes and monitoring indicators, and implementers proactively monitor progress.

Recommendation 4

That DFAT identify the level of representation and skills needed by DFAT staff to contribute to effective policy dialogue with partners in relation to health security and health systems strengthening.

Recommendation 5

That DFAT's strategy for future EID research:

- i. Include a focus on human health systems research.
- ii. Provide scope for researchers to have a broad infectious disease / health security remit.
- iii. Require consideration of research governance arrangements and strategies for maximising research uptake.

DFAT management agreed with all recommendations, noting that future support for FMD control will be considered in the context of funding priorities, capacity to deliver, benefits for zoonoses control and the needs of partner governments. Future responses to animal health in the Pacific will be tailored according to circumstances and take account of lessons learned from this evaluation and past investments. The full evaluation report, including the management response, is available at dfat.gov.au/ode.

Office of Development Effectiveness

DFAT's Office of Development Effectiveness (ODE) monitors the performance of the Australian aid program, evaluates its impact and contributes to international evidence and debate about aid and development effectiveness.