

Pacific Health Security Scoping Mission
PAPUA NEW GUINEA COUNTRY REPORT
following consultations in Port Moresby and Goroka, 9–14 April 2018

Please note: This country report presents findings from the visit to Port Moresby and Goroka. It has been slightly updated after further discussion with Papua New Guinea and regional counterparts.

Background

- 1. The Australian Government’s Health Security Initiative for the Indo-Pacific region** (‘the Initiative’) aims to strengthen country and regional capacity for prevention, preparedness, timely detection and response to new and emerging infectious diseases (EID). Concurrently, existing and re-emerging infections like malaria, tuberculosis (TB) and dengue fever, childhood diarrhoea, acute respiratory infection and zoonotic infections continue to contribute significantly to the burden of disease in many Pacific countries, alongside an evolving non-communicable diseases (NCD) crisis. The Pacific also has a rapidly emerging problem of antimicrobial resistance (AMR) including multi-drug resistant TB (MDR-TB) and some cases of extensively drug-resistant TB (XDR-TB) in Papua New Guinea (PNG). There is an increasingly recognised link between NCDs and infectious diseases like TB and AMR bacterial infections. Artemisinin-resistant *Plasmodium falciparum* malaria, which is established in parts of the Mekong region, has not yet been identified in the malaria affected countries of Melanesia. Strengthened capacity to comply with the International Health Regulations (IHR) will help countries to combat both new and endemic health threats.
- 2. An independent, high level scoping team visited Port Moresby and Goroka in PNG from 9-13 April 2018** on behalf of the Indo-Pacific Centre for Health Security (CHS), the area within Australia’s Department of Foreign Affairs and Trade (DFAT) tasked with implementing the Initiative.¹ The purpose of the visit was to consult with senior Government (GOPNG) officials and human and animal health program managers to: share information about the Initiative; assess PNG’s health security priorities and its capacity to address them; and identify options for Australian support through potential multi-country and regional activities. The team’s terms of reference (**Annex 1**) were summarised in an information sheet provided to key informants (**Annex 2**); travel, consultations and activities in PNG are shown at **Annex 3**.
- 3. The visit to PNG is part of a series of scoping studies that will guide the design and implementation of the Initiative in the Pacific.** Interim assessments have been undertaken in Kiribati, Tuvalu, Samoa and Solomon Islands, and another is under way in Nauru. An in-country mission was undertaken in Fiji immediately following the visit to PNG, and further consultations were held in conjunction with the Pacific Heads of Health (HOH) Meeting in Nadi on 18-19 April.
- 4. The team thanks the GOPNG for supporting the visit and meeting arrangements, for very productive discussions, and for the opportunity to visit and observe activities in hospitals and laboratories in Port Moresby and at the Papua New Guinea Institute for Medical Research (PNGIMR) in Goroka.** Special thanks to the Permanent Secretary and Deputy Secretary of the National Department of Health (NDOH), heads of NDOH departments, the National Agriculture and Quarantine Inspection Authority (NAQIA), other GOPNG officials, and non-Government, academic and development partners who met the team during the country visit.

¹ The team included Dr Jimmie Rodgers (Team Leader), Dr Allison Imrie (Laboratory Scientist) and Dr Rob Condon (Public Health Physician). They were accompanied by Mr Robin Davies (Director) and Dr Nick Harris (Veterinarian) from the CHS, DFAT Canberra.

Principal findings and observations

Specific health security threats and vulnerability in Papua New Guinea

5. PNG has the highest tuberculosis (TB) incidence rate in the Western Pacific Region (notification rate > 400 per 100,000); **drug-resistant TB is an ongoing public health emergency.** An estimated 25-30,000 cases of TB – and, among them, around 2,000 cases of drug resistant TB – are reported each year throughout the country; notification rates have increased in recent years but may be starting to plateau. There are high rates of TB-HIV co-infection. The TB burden is highest in Western Province, Gulf Province and the National Capital District (NCD). Latent infection and the duration of treatment mean that TB requires a more complex health system response than other disease control programs. The national treatment completion rate is less than 80%. MDR-TB represents more than 50% of newly diagnosed cases on Daru Island and around 25% in the NCD, but is also prevalent in Gulf Province and has most likely spread throughout the country – driven by erratic medicines supply, poor patient compliance with treatment or poor application of directly observed treatment (DOTS). Three cases of XDR-TB were being treated at Port Moresby General Hospital (PMGH) during the team’s visit. Open community transmission of MDR- and XDR-TB has been documented in Daru, and the existence of latent MDR-TB infection is regarded as inevitable.

6. PNG shares a land-border with Indonesia, which represents a potential avenue of importation of rabies and other zoonotic diseases. Rabies is moving steadily eastward in Indonesia. The island of New Guinea is currently rabies-free, but the proximity of the rabies-endemic Indonesian provinces of Nusa Tenggara Timor, Maluku and North Maluku and the abundance of dog movement across the land border with Papua (and, to a lesser extent, by sea; see [paragraph 25d](#)) and within PNG represent a significant risk of rabies introduction and movement. PNG does not currently hold stocks of rabies vaccine for animal use, although NAQIA is negotiating access to World Organization for Animal Health (OIE) stockpiles. Agriculture field officers and other human first responders do not currently receive pre-exposure vaccination.

7. Malaria remains endemic in PNG, with almost 350,000 confirmed cases and an estimated 900,000 total cases each year. The annual malaria incidence rate (AIR) fell from 205 to 48 cases per 1,000 between 2009 and 2014, with a corresponding reduction in parasite prevalence in household surveys. The successes are attributed to high coverage with long lasting insecticidal nets (LLIN), improved access to early diagnosis using rapid diagnostic tests (RDT) and highly effective treatment with artemisinin-based combination therapy (ACT). Deaths attributed to malaria have fallen by almost 70% since 2009, but malaria is still an important contributor to childhood mortality. Forty-six percent of suspected malaria cases are still diagnosed clinically. Therapeutic efficacy studies have not indicated the presence of artemisinin resistant *P falciparum*. Periodic shortages of RDTs and ACT have contributed to recent localised outbreaks and a reported increase in overall incidence, and present an ongoing risk of emergence of drug resistance. The current and projected AIR indicates that PNG is will not achieve the 2030 malaria elimination target of the Asia Pacific Leaders Malaria Alliance (APLMA; of which PNG is a member), and that transmission reduction remains the appropriate strategy.

8. Vaccination coverage remains too low to provide effective population level protection and there is imminent risk of major resurgence of measles and other vaccine-preventable diseases (VPD); vulnerability is increased by population displacement as a result of the recent earthquake (see [paragraph 12a](#)). In 2016, reported national coverage for measles-containing vaccine among children under one year of age was 36.4% (range by province: 15.5% in Jiwaka to 67.0% on Manus Island). For three doses of pentavalent (DTP-Hib-HepB) vaccine, coverage was 44%

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nationally (range by province: 17% in the Southern Highlands to 81% on Manus Island). The NDOH recognises that low vaccine coverage is associated with limited and inequitable access to health services and reduced performance of clinical outreach. Despite the introduction of pneumococcal conjugate vaccine (PCV) in 2014, acute respiratory infection is still responsible for 17% of reported under-five deaths.

9. PNG is currently undergoing accelerated transition from Gavi support, which is due to cease by 2021. Most current Gavi funding is used for outreach and cold chain infrastructure, although there is also ongoing assistance for procurement of pentavalent and PCV vaccines. Diarrhoeal disease causes 9% of reported under-five deaths and, subject to financing, PNG plans to introduce rotavirus vaccine – possibly as early as 2019, and possibly with Japanese encephalitis vaccine. Gavi itself classifies PNG as ‘fragile’ and has noted that it may be unrealistic to expect successful transition by 2021. Gavi is considering an alternative proposal that could see policies and limits on the health systems strengthening (HSS) ceiling, vaccine introductions and campaign costs waived for PNG.

10. There have been a number of other recent communicable diseases outbreaks in PNG. Major outbreaks of cholera occurred in 2009 and 2015. A nation-wide measles outbreak in 2002-04 was only brought under control with cyclical supplementary immunisation activities, and smaller outbreaks of measles, pertussis and typhoid have been reported in 2017 and 2018. Outbreaks of measles and diarrhoea have also been reported in displaced border populations crossing from Papua. Dengue is likely endemic and circulation of all four dengue virus serotypes has been reported, although dengue haemorrhagic fever and shock syndrome are rarely identified; dengue may be clinically misdiagnosed as malaria and treated with ACT. An outbreak of Chikungunya virus infection was identified in 2012.

11. PNG’s rapid population growth rate increases the risk of exposure of children to endemic disease threats and helps drive the high rates of disease transmission and prevalence in communities. PNG reported 280,000 births in 2017 – equivalent to about 770 births or the addition of ‘one new primary and secondary school combined’ in a single day. To provide some perspective, this is the equivalent of Vanuatu’s total population or about one-third Fiji’s total population every year, and likely close to 1 million people every 3 years. Given difficulties in civil registration accessing many ‘hard to reach’ places in the country, the real number of total births may be much higher. At this rate of growth, PNG’s population could reach around 20 million people by or before 2050, which would mean much greater risk of exposure of a greater number of people to endemic disease infections and transmissions unless those endemic diseases are brought under control or the population growth rate subsides markedly.

12. The continuing risk of seismic activity and extreme climatic events make PNG highly vulnerable to natural disasters like earthquakes, volcanic activity and tropical cyclones.

- a) A magnitude 6.5 earthquake struck Enga, Southern Highlands and Hela provinces in early April 2018 and relief efforts were under way at the time of the team’s visit.
- b) Extreme weather and environmental events may have direct impact on health through physical injury and damage to or destruction of health facilities; they are commonly also associated with indirect health effects such as outbreaks of VPDs and climate-sensitive infectious diseases and the results of population displacement (e.g. interruption of treatment and care for people with chronic diseases or disability, risk of sexual or gender-based violence).
- c) **Climate change and climate variability are likely to increase the frequency and severity of extreme weather events in PNG and the Pacific.**

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Public Health Emergency Preparedness

13. PNG conducts self-assessment of its core capacity to implement the requirements of the IHRs approximately annually under the IHR State Parties' monitoring questionnaire (IHR-MQ). The Executive Director of Public Health is the IHR Focal Point, supported by the NDOH Surveillance Manager. The most recent IHR-MQ results are summarised at **Annex 4**; these show improving surveillance, laboratory, response and risk communication capability but there are ongoing weaknesses in human resources, preparedness and other core IHR capacities, including at points of entry (POE) and for zoonotic diseases. Recent improvements in human resources capacity through field epidemiology training (**paragraph 24**) are not yet reflected in these results.

14. A National Disaster Risk Reduction Framework 2017-30 (NDRRF) and National Disaster Centre (NDC) are in place. The NDC was established under Chapter 403 of the Disaster Management Act (1984). The NDC comes under the Department of Provincial & Local Level Government Affairs. The NDC has two divisions - Risk Management (RM) division which deals with research, analysis, awareness, education and training; and Community Government Liaison (CGL) division that handles rapid response and operations. Each division is headed by Assistant Directors who report to National Executive Council (NEC) through the NEC appointed Director. The team observed that:

- a) The NDRRF is largely descriptive or concerned with higher level priorities and options; a detailed National Disaster Management Plan is not yet in place.
- b) The NDRRF is focused almost exclusively on natural and environmental disasters, and it is not clear whether and how a major or nation-wide health event would trigger a disaster response or how the health consequences of a natural disaster would be incorporated into the response.
- c) The NDC only convenes when a specific 'event' has occurred (i.e. not routinely between events), under the leadership of an appointed Disaster Controller. The NDC appears overwhelmed by the present earthquake emergency.

15. A National Action Plan for Emerging Diseases and Public Health Emergencies is not yet in place. WHO will assist the NDOH to develop the Plan under the four-year *DFAT-WHO PNG Partnership Agreement 2018-2022*; this process should involve NAQIA where appropriate.

16. There is no specific item within the national budget that can be drawn on to respond to disasters, nor in the health budget to respond to outbreaks, public health emergencies or the health consequences of environmental disasters. The NDC has its own budget, but this is for administrative rather than operational or response expenses.

- a) Following a declaration of a 'state of disaster', the NDC assumes control in conjunction with the Provincial Disaster Authority. The national Executive Committee would most likely enact emergency legislation to mobilise financial allocations for the response through Treasury.
- b) All donor funds received during a 'state of emergency' are channelled via consolidated accounts while in-kind contributions are mobilised directly to the point of response.

17. There is currently no mechanism for whole-of-Government oversight of IHR implementation in PNG. NDOH and NAQIA have independent emergency response plans (ERP) – the NDOH one in draft form – but there is no 'all hazards' public health emergency preparedness and response plan (PHEPRP). The team observed that:

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- a) A joint external evaluation (JEE) was planned for 2018, just before APEC, but this was deemed to be impractical and the timing has now shifted to the latter part of 2019.
- b) The JEE would be of most value to PNG if national self-assessments under the IHR-MQ were conducted in 2018 and 2019, i.e. before the JEE. This would define specific health security challenges and guide the strengthening of core IHR capacities ahead of the JEE.
- c) Counterparts from neighbouring Pacific countries might usefully take the opportunity to observe and participate in the PNG JEE to enhance their understanding of the process.

18. PNG is able to draw on national and international partnerships to assist with natural disaster and outbreak response. The World Health Organization (WHO) and other UN agencies and international non-Government organisations (NGOs) like Médecins Sans Frontières and World Vision are active in both routine service provision and emergency response. There is a national policy to guide public-private partnerships (PPP) in the health sector; under this, organisations like the Oil Search Foundation leverage their ability to manage logistically complex operations in remote areas to support and advise Provincial Health Authorities (PHA) and District Administrations.

19. The PMGH has its own ERP for outbreaks and mass casualties. This has not yet been activated, and no simulation exercise has been conducted to test it.

20. The Public Health Act (1973 [Cap.226]); Quarantine Act (1953) and Animal Diseases and Control Act (1952) are modelled on Queensland legislation of the pre-independence era and are more than 20 years old. All of these legislations need to be updated to meet the needs of the IHRs with appropriate provisions for EIDs (including methods for mandatory reporting and management of individuals who need to be quarantined or isolated). The new Biosecurity Act is currently before parliament.

Surveillance, risk assessment and response

21. The national syndromic surveillance system is established in all provinces. Conditions monitored include acute fever and rash, diarrhoea, influenza-like illness, prolonged fever and dengue-like illness.

22. A national electronic health information system (eNHIS) has been piloted in 5 provinces and is about to be extended to another three provinces as the first step towards full national roll-out. The eNHIS does not yet have surveillance modules or the ability to support real time reporting of outbreak prone infectious diseases; the only current disease-specific module is for TB. A mid-term review of the pilot project recommended the addition of surveillance modules in support of improved public health and surveillance functionality.

23. An event-based surveillance system using mobile phone technology has previously been used but has not been activated for the current earthquake response or other recent events. It is not clear what post-earthquake surveillance has been put in place, although we did hear of local measles and whooping cough outbreaks in remote earthquake-affected communities reported verbally through a private sector partner.

24. PNG has developed a highly successful Field Epidemiology Training program (FETPNG) to build the critical work force numbers and expertise needed to address national public health challenges, priorities and threats. The program is implemented by NDOH with technical and financial support from DFAT, the United States Centers for Disease Control and Prevention (US CDC), WHO and the Hunter-New England Health Service in Australia. PNGIMR contributes to the

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FETPNG program. Across 5 cohorts, 69 participants drawn from all provinces and 18 of the 89 districts of PNG have completed the program; about half the graduates are currently working at provincial level, while the remainder are approximately equally divided between national and district level roles (paragraph 13). Only one participant from an animal health background has enrolled in and completed the program; there is an important opportunity to develop specific modules on zoonotic diseases and to encourage more veterinary, para-veterinary and NAQIA field workers to undertake the FETPNG (i.e. to integrate the existing animal health epidemiology training under the 'Core Knowledge' program currently being run by the Australian Government Department of Agriculture and Water Resources [DAWR] and NAQIA). A similar program conducted by the Pacific Islands Health Officers Association (PIHOA) in the north Pacific and the Pacific Community (SPC), Pacific Public Health Surveillance Network (PPHSN) and Fiji National University (FNU) are also considering the inclusion of laboratory and zoonoses modules in that program, which also provides an additional option for the FETPNG program.

25. Point of entry (POE) health and quarantine security procedures need to be greatly strengthened to manage risks associated with international air arrivals.

- a) Improved air links mean that PNG is no longer shielded from emerging regional and global health threats by its location and geography. **It is now possible to travel from Asia to PNG within the incubation period of many infectious diseases** of international public health concern. Air Niugini has direct flights to ports in Asia (Singapore, Hong Kong, Manila) as well as to Australia and other Pacific countries, and is preparing to inaugurate direct or one-stop flights to Indonesia (Denpasar, Jakarta). Other carriers also have direct flights from Asia.
- b) **Large numbers of foreign workers – mainly from China and the Philippines – enter PNG every year.** Police Clearance and a valid Medical Report are pre-requisites for issuance of long-term visas and work permits. There is no pre-arrival health screening of travellers entering the country on short-term visas, such as tourists and short-term business travellers; the only on-arrival screening is through a simple, basic questionnaire.
- c) **There is limited routine inter-sectoral dialogue** between the NDOH and other ministries responsible for POE screening, and no endorsed multi-sector work plan to address IHR POE gaps. Customs and Immigration officials reported accessing information on Zika virus infection through the internet during the regional outbreak of 2016 because coordinated national information was not available.
- d) **Foreign fishing, logging, mining and cargo vessels, including those arriving from Indonesia and Asia, can potentially by-pass designated ports for quarantine and health inspection.** The team was advised that these ships may often have dogs on board, and sometimes also cats and chickens.
- e) A **medical room** with basic emergency equipment and supplies and staffed by a nurse / paramedic is located **at Jackson International Airport**, adjacent to the immigration queues. An ambulance is also based on site. The team observed that:
 - The contract for managing the medical room at the airport has recently changed providers.
 - The purpose of the medical room appears to be mainly to cater for incoming passengers or airport staff with minor ailments or the occasional acute, non-infectious health event that may need assessment.
 - PPE and written protocols for managing a potentially infectious traveller were not available, and the room is not well set up to provide safe, temporary segregation.
 - Ill passengers on an arriving aircraft would generally be assessed on-board before being

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transferred directly to an ambulance on the tarmac for transport to PMGH or the private Pacific International Hospital (i.e. rather than being brought into the terminal).

- f) The Airport does not have protocols or plans for managing mass casualties or potentially infectious incidents on board an incoming aircraft, and no simulation exercises or drills have been conducted.

26. Travellers from villages along the south coast of Western Province are able to visit the Torres Straits Islands (TSI) for traditional and family reunion visits and shopping. Visitors often access health services during such visits; chronic diseases, acute or dormant (*P vivax*) malaria and latent or active TB infection are the most likely reasons for presentation.

Laboratories

27 Medical laboratory services are delivered at seven levels: National (Public Health Laboratory, National Blood Service, and Clinical Pathology Services); Regional; Provincial; District; Health Centre; Community Health Post; and Aid Post. The 2015 National Laboratory Policy recognises services are fragmented and quality of laboratory services has declined, and that public health and clinical laboratory services are generally disconnected. PNGIMR is a noticeable exclusion in the National Laboratory Policy.

28. The Central Public Health Laboratory (CPHL) is the national reference laboratory for PNG and is charged with providing laboratory support to key public health programs including disease surveillance and control, environmental health monitoring, development of laboratory standards, quality assurance and staff training.

- a) CPHL has little or no oversight over provincial medical laboratories and is not necessarily informed of provincial laboratory diagnostic test systems and quality assurance (QA) protocols and outcomes, and of decisions around equipment purchases. Provincial staffing and resourcing is under the Province's control, not CPHL, and provincial laboratory participation in external QA (EQA) programs is likewise not under CPHL control.
- b) CPHL has demonstrated expertise in a range of systems to test for viral, bacterial and parasitic diseases including serological, culture and molecular approaches, and will partner with PPHLN in the Pacific laboratory mentoring network.
- c) TB culture is performed at CPHL and is available to all specimens from every province. Drug sensitivity testing (DST) is currently referred to the Queensland Mycobacterial Reference Laboratory in Brisbane and will be available at CPHL once ongoing proficiency training is completed. TB culture and DST is performed in the CPHL PC3 facility; there are currently no other pathogens throughout the country that require a PC3 laboratory but, should that situation change, the facility at CPHL would be available.

29. Standard Operating Procedures (SOP) are not standardized across national laboratories and testing capacity is not clearly identified. Testing for TB across provincial laboratories and CPHL is more advanced than for other bacterial pathogens but testing capacity and SOPs are not uniform across all sites and data are not reported back to CPHL. DST to detect AMR in other pathogens is not consistently undertaken across the public health laboratory network and is not reported back to CPHL. There is no established coordinated AMR surveillance system.

30. Testing across the public health laboratory network for persisting endemic diseases such as dengue, TB, HIV and malaria, and for VPDs, **is largely program based and funded by donor partners.**

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31. PMGH is currently engaging consultants from India to work on achieving ISO 15189 accreditation. Laboratory information system integrated with new electronic hospital information except for microbiology; records are paper-based and manually updated.

32. A scoping study to assess feasibility of constructing and operating a National Reference Laboratory (NRL) was undertaken by GOPNG, following discussions with Government of Australia and Government of the People's Republic of China. [Estimated construction costs of PGK 100 million; associated residential accommodation PGK 15 million; annual recurrent costs, including salaries, PGK 9 million]. A formal request for funding will be made to Governments of PRC and Australia in 2018. The NRL would be located within a Public Health Institute that would serve provincial laboratories and public health units.

PNG Institute of Medical Research (PNGIMR)

33. PNGIMR is the research arm of the NDOH and has a long history of investigating national priority diseases, beginning with kuru in the 1960s and including malaria, HIV, dengue, and vaccine preventable diseases. GOPNG and the former AusAID have previously provided core funding for operational costs and to support preliminary studies initiated by PNGIMR into infectious diseases identified as being of national importance. Recent declines in funding following a tumultuous period in PNGIMR's history have severely impacted the ability of the Institute to maintain current projects and to plan for future investigation of national priority diseases. The positions for Deputy Director of Corporate Administration and Deputy Director of Science and Research are currently unfilled and the Acting Director performs all three roles. A Strategic Plan is currently being developed and will prioritise key areas linked to the PNG National Health Plan.

34. PNGIMR conducts research programs at its two main sites in Goroka and Madang across five main areas - Vector Borne Diseases, Environmental and Emerging Diseases, Population Health and Demography, Infection and Immunity and Sexual and Reproductive Health. PNGIMR laboratories are located at sites in Goroka, Madang, Maprik, Wewak, and Port Moresby; the Port Moresby laboratory is associated with the PNG School of Medicine and Health Sciences. Research has been funded primarily by competitive research grants in collaboration with investigators from Australian, American and European institutions. Other projects, including investigations to identify introduced viral diseases (e.g. Chikungunya, Zika), have been undertaken with the support of donor and development partner agencies like WHO.

35. PNGIMR and CPHL work closely together on the Australia-China-Papua New Guinea Pilot Cooperation on Malaria Control Project (the Trilateral Malaria Project), in collaboration with National Institute of Parasitic Diseases (NIPD), China. CPHL capacity to conduct reference laboratory roles and malaria, TB and HIV EQA programs at province level has been enhanced by this program, as demonstrated by a pilot project in East New Britain where the provincial laboratory conducted malaria EQA assessment for lower level laboratories and sent results back to CPHL (the first time this has happened in PNG). Decentralization of CPHL EQA programs is feasible and should be expanded to more provinces.

36. A buttressing coalition (BC) composed of PNG and international partners has long served as an advisory body to advocate for PNGIMR and to provide scientific and technological advice on programs. In recent years PNGIMR has not received the support it has needed and there is recognition that the structure and composition of this advisory body should be reassessed.

37. The team is of the view that the PNGIMR would benefit from having a strategic advisory group (SAG). The SAG would function both as a bouncing board for the Director and the senior

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management team of the IMR, and also provide advice on policy, strategy, research priorities and resource mobilization. The SAG would be different from the Board that deals with governance. Its membership would include two from PNGIMR (Director and Deputy with Director to be co-Chair and deputy to also provide secretariat role); three from the BC, with one to be Co-chair; three from the broader community – not scientists or clinicians; and one from among development partners – a total of 9 members. The SAG would be co-chaired by the Director of IMR and a delegate selected from the BC. The new strategic plan would include the roles, functions, operational arrangements of the SAG.

38. The team also affirms the view that PNGIMR has the scientific and technical capacity to function as a regional reference laboratory. The team connected IMR with the PPHSN laboratories Network (LabNet) and discussions regarding a role for IMR as a laboratory mentoring partner are ongoing.

Infection prevention and control in health care settings

39. The PMGH laboratory undertakes bacterial culture but does not conduct systematic surveillance and reporting of AMR or sterile site surveillance data to guide clinical management of bacterial infections. The team was unable to access data on AMR among common pathogens.

40. Infection control capacity, equipment and infrastructure at PMGH have improved over the last 5 years but need further improvement.

- a) **Infection Prevention and Control Policy and Guidelines** – The current IPC policy and guidelines are currently undergoing review and revision.
- b) **IPC Committee** – An IPC Committee exists at PMGH but does not meet regularly and does not have a current Action Plan.
- c) **Personal protective equipment (PPE)** – Gloves and operating theatre masks and gowns are the only PPE that is readily available in front line clinical areas of the PMGH. There is an isolation room in the Emergency Department where patients with suspected MDR-TB would be assessed by staff wearing N95 masks.
- d) **Emergency department** – The PMGH is principally a referral hospital, although primary presentations are seen, assessed and treated. Triage is adequate to identify patients with respiratory infections (who would be given an operating theatre mask and segregated in one corner of the crowded waiting room). Procedures would be readily overwhelmed during a major infectious event.
- e) **Isolation wards** – **The only isolation facility at PMGH is the TB ward, which is separated into separate areas for patients with drug sensitive, MDR and XDR TB.** Patients with confirmed MDR-TB and staff caring for them were observed to be wearing masks – surgical masks for patients and N95 for staff. A new TB isolation facility made of modular units is located on the Hospital campus and is waiting to be commissioned. The intensive care unit (ICU) is completely open plan; the only potential isolation area is a three-bed side room that is operational only during cardiac team visits.
- f) **Patient flow** – The only access to the TB ward and ICU is through the main hospital. There is direct ambulance access to the new TB isolation facility.

41. There is a risk of importation of AMR pathogens through offshore medical treatment. While the GOPNG does not fund offshore medical referral, patients with complex medical conditions may self-fund travel to the Philippines, Australia or occasionally India for tertiary care.

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Treatment may include surgical and other invasive procedures with lengthy duration of hospitalisation. Returning patients pose increase risk of bringing AMR pathogens to PNG. This risk may be extremely difficult to manage as referrals are generally private or self-referred in nature and not subject to agreements between the GOPNG and tertiary referral hospitals overseas. There is no register of patients undergoing treatment internationally.

Zoonoses

42. There is potential for importation and wide geographic dissemination of rabies in dogs before an outbreak would be detected. People and animals freely cross the land border between PNG and Indonesia's Papua province for traditional and family reunion visits, hunting and shopping. Surveillance and diagnostic capacity in border areas is limited. Front-line NAQIA and community staff and RSPCA officers (who manage a stray dog program in Port Moresby) do not receive pre-exposure vaccination (see also [paragraph 6](#)). The team was informed of the imminent signing of a Basic Border Agreement (BBA) Memorandum of Understanding (MOU) between NAQIA and their Indonesian counterparts during the visit to address and encourage joint surveillance activities along their common border.

43. Limited national veterinary and quarantine inspection capacity. There are around 7 veterinary practitioners in the country: three nationals, three from the Philippines and one at the RSPCA. Supporting these are 79 paraveterinary officers trained through the former SPC paravet training program and for whom the team was advised refresher training was needed, with additional emphasis on field work. This limited number of trained veterinary and paraveterinary practitioners raises concerns about the capacity to undertake effective surveillance and inspection of animals, in particular along the common porous land border between PNG and Indonesia's Papua Province. There is an urgent need for training of additional paraveterinary practitioners and refresher training of existing paravets to increase PNG's animal health inspection and surveillance capacity.

44. Surveillance of animal health is extremely limited.

- a) NAQIA has previously implemented an SMS-based mobile surveillance system along the PNG-Papua border and in other 'hot spot' areas but this is no longer functional due to affordability and connectivity challenges. The network of 79 trained paravets located throughout the country provides intermittent reporting but absence of a functioning animal health information system makes regular reporting challenging.
- b) The Australian DAWR has conducted joint surveillance activities with NAQIA in high risk areas, particularly the land border region, for over 20 years, with diagnostic samples tested by AAHL. DAWR also provides emergency animal disease response support to NAQIA on a case by case basis.
- c) NAQIA is able to undertake basic laboratory screening; however, samples for priority disease are sent to Australia. Capacity building activities are also conducted under an MOU arrangement.
- d) PNGIMR also has the capacity to support animal health surveillance and has assisted NAQIA on occasions.

Critical health system constraints in addressing health security risks

45. Several areas of health system governance and capacity also compromise PNG's ability to detect, report and respond to acute public health events. They include:

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a) **Discontinuity of technical and health system platforms between the national, provincial and district level** – these create challenges to surveillance and response to EIDs and in addressing endemic infectious diseases. Under the Organic Law, Provincial Health Authorities have responsibility for managing public health programs under their jurisdiction while the NDOH has mainly a policy-setting and technical oversight role. This fragmentation has become more complex with the promulgation of the District Development Authorities Act, which further devolves funding and decision-making to the District level. The NDOH does not have a say on the use of funds allocated to provincial and district health authorities from the national government via the NDOH. Australian investments in health security in PNG will also need to work within and support this decentralisation agenda.

b) **Pharmaceutical and laboratory procurement and supply management (PSM), distribution, and monitoring of medicines, equipment and other essential chemicals and reagents** – Efficient and effective PSM and distribution systems for vaccines and essential medicines, PPE and other consumables that ensure ‘zero stock outs’ at various points of service delivery (laboratories, health facilities) is essential to containing potential spread of infectious diseases. PNG has experienced long term disruptions to its PSM. **While it is beyond the scope of the Initiative to rectify the PSM systems in PNG, there is urgent need for further assessment of PSM and supply chain systems to health facilities** as a part of responding effectively and efficiently to EID and endemic communicable diseases threats.

c) **Human resources and training** – The FETPNG, while highly regarded, has only accepted and graduated one candidate from an animal health background in four years. It also remains positioned outside the tertiary education sector, and is therefore viewed as CPD rather than a formal qualification with links to career advancement.

- There is an important opportunity to strengthen PNG’s capacity to detect and respond to zoonotic threats by including a zoonosis module in the FTEPNG programme and actively enrolling candidates from the animal health sector to work alongside human health counterparts.
- The University of Papua New Guinea (UPNG) School of Medicine and Health Sciences regards the FETPNG as a potentially useful entry pathway into their Postgraduate Diploma and Master’s level programs in Public Health; some UPNG graduates have also gone on to do the FETPNG and have performed well. However, UPNG did not express interest in accrediting the FETPNG; alternatives therefore need to be explored to consolidate career progression for FETPNG graduates, including stronger engagement with similar programs offered through institutions in Australia (e.g. the Australian National University Master of Applied Epidemiology program) or Fiji (e.g. the range of training programs being developed by PPHSN and FNU under Strengthening Health Interventions in the Pacific; SHIP).²
- Some discussion may be needed with PPHSN and FNU regarding the alignment of the FETPNG with FNU’s new Postgraduate Certificate in Field Epidemiology (PGCFE).

Options for Australian support

46. **DFAT in PNG is considering a health security component of its bilateral program and has already developed a cascade of possible Australian support.** The models considered include:

² Potential links between similar programs in different countries will be considered further in the scoping team’s regional report.

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- a) **Essential IHR Core Competencies** – ‘IHR core’ (IPC/AMR, mapping of public health risks and resources, laboratory capacity and biosafety/biosecurity enhancement, POE)
- b) **Essential IHR Core Competencies plus additional focus modules** – ‘IHR-plus’ (as above plus zoonoses, immunisation, food safety, chemical hazards, support for the team preparing the PHEPRP and an expanded range of activities addressing AMR)
- c) **An integrated TB and Health Security Program** – Leverage further ‘IHR-plus’ achievements through increased TB investment.

47. **The scoping team agrees that IHRs provide the most logical framework for Australia’s investments**, particularly until the proposed JEE undertakes a more detailed assessment of what is needed in PNG. A further option may be to extend the trilateral model of cooperation (paragraphs 32, 35), leveraging China’s progressive response since the SARS outbreak and its involvement in establishing an Africa CDC.

48. **Core IHR capabilities also include leadership, governance and financing.** Australian support for Health Security and IHR interventions would be complementary to other DFAT-supported activities addressing leadership, governance and financing in the health sector.

49. **The scoping mission has identified a number of partner government and other stakeholder priorities for PNG, including possible areas for Australian investment.** They include:

- a) A small number of activities for **possible immediate support** at relatively modest cost – potentially using resources from Australia’s bilateral aid program or through the CHS.
- b) Other technical areas that are likely to benefit from **medium term regional or multi-country modalities of support** (these were also discussed with other PICs at the Pacific HOH Meeting).
- c) A small number of areas require **additional information or inputs** in order to be assessed.

50. **Subject to relatively early commencement of a design process for Australia’s bilateral program in PNG**, the team suggests the following recommendations for PNG (paragraphs 52-53) be **incorporated into the health security component of the bilateral program** to ensure Australia’s investment into health security in PNG is seen as a composite whole.

51. **We have not recommended the direct placement of Australian health security funds into the TB, malaria, immunisation, HIV or NCD programs in PNG (or other PICs).** However, we expect many elements of broader health system support envisaged under this Initiative to also strengthen the delivery of services under disease- or intervention-specific programs.

Areas for possible immediate support where Australia could address immediate priorities

52. **The following areas of technical assistance (TA) are likely to respond immediately to areas of priority identified in discussion with PNG counterparts:**

- a) **Laboratory Services:**
 - i) **TA to undertake a final review of the latest draft of PNG’s national laboratory policy from a health security perspective** – specifically addressing the need to incorporate the role of IMR and animal health laboratories in the policy, and clarifying the strategic approach to establishing a National Reference Laboratory (as either a stand-alone institution or as part of the proposed National Health Institute on a unified campus) and to confirm its role as focal point for laboratory services in PNG. The review would define entry points for critical system strengthening (e.g. integration between national and sub-

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national levels, QA mechanisms, PSM and supply chains for reagents, reporting and integration with surveillance systems, etc.) and assist with developing SOPs.

ii) TA to help PNGIMR updates its strategic plan, develop a multi-year business plan (core functions, regional role, governance framework) and clarify the relationship with and roles of international scientific and technological support (e.g. through the 'buttressing coalition') and IMR's links with PPHSN LabNet.

iii) TA from a hospital epidemiologist or laboratory scientist with quantitative data analysis skills to conduct a retrospective review of antimicrobial sensitivity of organisms cultured in the PMGH microbiology laboratory, and help establish systems for AMR surveillance.

iv) TA to assist CPHL to develop and distribute SOPs for antimicrobial drug sensitivity testing to provincial laboratories.

v) Support to introduce or strengthen quality management systems across the country, including EQA programs for malaria, TB and HIV, under direction of CPHL, and thus implement the National Laboratory Policy.

vi) TA to assess options for developing laboratory information systems that contribute to patient management and which can link to national surveillance systems and regional laboratory data management and analysis systems such as WHONET.

b) TA to ensure access to human rabies vaccine and post exposure immunoglobulin, including import permits and importation processes. This TA could also continue to work up the process for obtaining access to the OIE animal rabies vaccine pool.

c) Provision of hospital design TA to assess options for development of Isolation Ward facilities at PMGH.

d) Support for the IHR focal point to attend or participate in a JEE elsewhere in the region to gain experience and insight into the JEE purpose and process.

Potential medium to longer-term Australian health security investments

53. The following technical assistance and support would potentially contribute meaningfully to health security and related capacity in PNG over the medium to longer term.

a) Strengthen links between **Laboratories to develop scientific and technological capacity**

- Support partnerships with Australian Public Health Laboratories under the mechanism being proposed by this scoping exercise to develop laboratory quality management; develop diagnostic test capacity; train students and staff.
- Support for PNGIMR, CPHL/NRL and provincial laboratory staff to present and discuss technical and scientific findings at national forums (such as in-service sessions, seminars and symposia)
- Support PNGIMR partnership with PPHSN in developing its role as a regional testing and reference laboratory
- Support PNGIMR to develop links with the NAQIA National Veterinary Laboratory, the Australian Government's Laboratories Emergency Animal Disease Diagnosis and Response (LEADDR) Network and the Australian Animal Health Laboratory (AAHL) to improve animal health diagnostics and confirmatory testing for zoonoses, commensurate with surveillance system and sample throughput.

b) **Strengthening IPC and AMR mechanisms** – through;

- **technical links** with the Australasian College of Infection Prevention and Control or clinical institutions (e.g. supporting and formalising the established links with Townsville

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- Hospital, including a MOU with defined objectives and a costed work plan);
- support for **postgraduate training** in **IPC** for nurses through an Australian or New Zealand institution (e.g. Australian Commission on Quality and Safety in Health Care);
 - continuing **technical guidance and capacity development for the PMGH IPC Committee** to oversee the revision and implementation of the IPC policy and guidelines and strengthen IPC practices in this and other health care settings (including policies in relation to patients returning from medical treatment overseas);
 - Linking PNG to the PPHSN Pacific Infection Control Network (PICNet) mechanism.
- c) **Surveillance and HIS – human resources** aspects
- Broadening access to the FETPNG epidemiology and data for decision-making training to include animal health workers (veterinarians, para-veterinary officers and NAQIA field officers) and hospital epidemiology (e.g. laboratory workers, IPC practitioners).
 - Developing modules in animal health and possibly laboratory surveillance to be added to the FETPNG
 - Exploring options to harmonise the FETPNG with the FNU PGCFE, with a view to strengthening each program and facilitating academic accreditation for FETPNG candidates.
- d) **Surveillance and HIS – system development** aspects
- Supporting and maintaining links with the team developing surveillance modules in conjunction with the national roll-out of the eNHIS.
 - Leverage improved human resources capacity in the animal health sector and support the establishment of an Animal Health Information System (AHIS) as an early warning system – potentially using some of the parameters of the OIE World Animal Health information System (WAHIS), to eventually be linked to PPHSN at the regional level as a step towards toward a Pacific *One Health* information management system.
 - Linking PNG into the PPHSN Network
- e) **POE screening for international arrivals** – More thinking is needed in relation to screening of incoming travellers to PNG. **Further discussion with WHO is needed to explore ways of implementing more effective screening of incoming travellers and the thresholds that would activate actions and responses** – in particular, from countries that may be at high risk of novel or re-emerging pathogens and have direct or one-stop air links with PNG; this could be undertaken in partnership with Australian or New Zealand border control authorities.
- f) Recommendations addressing other important health system ‘building blocks’ identified during the mission including regional approaches to strengthening **PSM, immunisation and IHR-relevant public health, animal health and quarantine legislation** will be considered in the draft regional report.
- g) In conjunction with WHO PNG (e.g. under the *DFAT-WHO PNG Partnership Agreement*), the NDC and line ministries, provide technical support for **scenario planning and practical exercises to strengthen PNG’s preparedness** for and response to natural disasters and EIDs.

Next steps

54. Some **follow-up discussions** with key informants in PNG and Australia and with relevant regional partners will be pursued by email and telephone over the coming weeks. Options will also be reviewed with the team that is undertaking a scoping mission in Asia, including in Indonesia.

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55. Where medium- to longer-term country-specific observations and recommendations show strong commonality with other PICs and neighbouring Asian region countries, they will be absorbed into the **final regional synthesis report and recommendations to DFAT**.

Annex 1 – Terms of Reference -

TERMS OF REFERENCE

HIGH LEVEL SCOPING STUDY for DESIGN of MULTI COUNTRY PARTNERSHIPS PROGRAM to STRENGTHEN HEALTH SYSTEMS FOR HEALTH SECURITY

PACIFIC TEAM

This Terms of Reference (TOR) specifically addresses Australia’s investments through partnerships to strengthen health systems and improve health security in the Pacific region. One of the challenges facing Australia is how to maximise the effectiveness of investments in terms of their being fit for purpose, effective at both a national and regional level (making an individual country safer as well as contributing to the region’s safety) and coherent (so that each activity contributes to a whole greater than the sum of its parts). A rigorous evidence-based investigation of options and clear-sighted analysis will reduce the potential for investments to be scattered, fragmented and low-impact.

This investigation will be a DFAT-led process, managed by the Indo-Pacific Centre for Health Security (CHS). The first phase will comprise a preliminary desk study (described briefly below but to be managed under a separate TOR), and scoping study. The first phase will be followed by a more technical design process, and the development of an M&E framework (both of which are described briefly below but to be managed under separate TOR).

- **Preliminary desk study:** Collation of existing information on health security capacity in target countries; information from posts; existing health program information, provision of key documents, briefing and background papers to consultants (eg JEE reports or IHR self assessments, relevant DFAT evaluations or quality reporting, other studies identified through literature review).
- **Scoping Study:** High-level visit to the Pacific led by a senior consultant with high-level networks of contacts and access to senior members of Government in partner countries. This study is anticipated to include visits to up to four countries. It will culminate in a report and a presentation in Canberra with a broad group of staff from different areas to be invited, presenting recommendations for investment.
- **Design Process:** This will be a more detailed exercise designed to generate activities and annual plans, based on the Scoping Study Report. The design team will consist of technical experts from relevant thematic areas, and preferably include one person from the scoping study team to enhance continuity.
- **M&E and Performance Framework:** This should be addressed by the design team and linked to the overall Health Security Initiative (HSI) Performance Framework.

A) Background

The Indo-Pacific region includes many recognised hotspots for rapidly spreading and dangerous emerging infectious diseases, 75 per cent of which originate in animals. A major disease outbreak will have severe health and economic implications for our region - costing lives, disrupting regional trade, tourism, and development. In addition, the region is experiencing growing antimicrobial resistance including in tuberculosis and malaria, which threatens to undo decades of medical advancements in treatment of these high burden diseases.

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In June 2016, the Australian Government made a pre-election policy commitment to invest in regional health security to safeguard the health and development of Australia and our region. DFAT's Indo-Pacific Centre for Regional Health Security in Australia is delivering on this commitment under the Indo-Pacific Health Security Initiative (the Initiative) announced by the Foreign Minister on 8 October 2017. This Initiative contributes to the avoidance and containment of infectious disease threats with the potential to cause social and economic harms on a national, regional or global scale.

With funding of A\$300 million over five years its investments will:

- Promote global and regional cooperation
- Catalyse international responses to countries' identified needs
- Apply Australia's unique strengths in health security
- Accelerate access to new and effective tools.

The Initiative builds on Australia's Health for Development Strategy, 2015-2020, which emphasises the role of strong health systems in improving health security³. It aligns with the direction of the Government's new White Paper in positioning Australia to take an active and ambitious role in responding to regional and global challenges. The Initiative specifically addresses Sustainable Development Goal Target 3.d: to "strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks". The indicator for this target is countries' status in relation to the International Health Regulations (IHR) capacity and health emergency preparedness index - measured by self-assessment or through a WHO-led voluntary Joint External Evaluation (JEE). A similar index has been established by the World Organization for Animal Health (OIE) to evaluate the Performance of Veterinary Services (PVS).

The Initiative aims to inform evidence-based planning, help prevent avoidable epidemics, strengthen early detection capacity, and support rapid, effective national and international outbreak responses. It does this by accelerating research on new drugs and diagnostics, expanding partnerships at the national, regional and global level to strengthen human and animal health systems, and deepening people-to-people linkages that build national and regional health security capacity. Funding for the initiative is drawn from Australia's international development assistance program and will be applied to activities eligible to be classified as Official Development Assistance.

In 2017 DFAT's Office of Development Effectiveness commissioned an evaluation of Australia's investments in combatting pandemics and emerging infectious diseases, over the previous decade, with a focus on health systems impact – in both human and animal health. Previous programs have worked bilaterally and regionally. The evaluation found the best outcomes for animal health were: the establishment of a regional disease control model for foot and mouth disease (FMD) in South East Asia; and, the establishment of a digital surveillance program (i-sikhnas) for the use of farmers in Indonesia. Attempts to use a One Health approach (linking human and animal health) presented challenges in working across jurisdictions. Areas with the best results were public health issues with common ground such as rabies, avian influenza and antimicrobial resistance.

³ Questions used in the H4D Strategy to identify Health System Strengthening Activities were:

- Do the interventions have cross-cutting benefits beyond a single disease?
- Do the interventions address policy and organizational constraints or strengthen relationships between the different system areas?
- Will the interventions produce permanent systemic impact beyond the term of the project?
- Are the interventions tailored to country-specific constraints and opportunities, with clearly defined roles for country institutions?

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Governments in the Indo-Pacific have shown a strong interest in health security with all ten ASEAN member countries having undertaken, committed to or formally expressed interest in undergoing a JEE of their capacities to meet the legally binding International Health Regulations 2005 (IHR) requirements. Pacific leaders have also agreed to develop a new Pacific Health Security Coordination Plan (PAHSEC) to assess and develop their IHR capacities.

B) Objectives of the Assignment

To investigate the articulated needs of countries and make recommendations for targeted responses that would:

- provide a clear value add in a crowded global context
- add up to a whole greater than the sum of parts
- have a regional impact as well as a national one
- build on existing, effective DFAT programs where relevant
- have appeal to partner governments, and our own
- are evidence-based and can demonstrate development outcomes (ie health security institutions and systems improvements)
- leverage resources where possible

C) Scope of the assignment

i) The Scoping Team

The scoping team will have senior representation and are expected to operate at a strategic level, consulting and communicating with senior government officials in selected countries to promote Australia's new Health Security Initiative, identify the partner country's view of national priorities in this area, and secure the partner country's commitment to participating in potential regional multi-country and whole of region activities.

The scoping team will also meet with country representatives of multilateral organisations, senior DFAT staff at post and where relevant, non-Government and private sector organisations.

ii) The Scoping Missions

The mission will comprise a period of approximately 34 days (19 travel days and 15 other working days).

The mission will comprise the following:

- Pre-departure work: document review and finalisation of methodology and planning (estimated 2 days), and pre-departure meetings in Canberra (estimated 3 days).
- Visits to four countries (estimated 19 days, indicatively three separate trips between 18 March and end of April)
- Post-visits report drafting, workshops and presentation of findings to DFAT in Canberra (estimated 10 days = 3 days for country level reports and 7 days for the final report/workshop)

iii) Consultations for each mission team

Expected Canberra consultations (individual meetings and roundtables)

- Health Policy Branch
- Indo-Pacific Centre for Health Security

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- Humanitarian
- Gender, Climate Change, Disability Branches
- Relevant DFAT country desks
- Multilaterals, Banks and Funds
- NGOs & Volunteers Branch
- Scholarships
- Select whole of government partners

In-country consultations

- Meet and brief Australian High Commissioner on arrival
- Consult with High Commission/Embassy staff
- Meet with partner government Ministries – Health, Finance/Treasury, Agriculture, Planning
- Meet with in-country multilaterals (WHO, OIE, FAO, ADB, WB)
- Meet with key bilateral donors
- Meet with relevant NGOs and/or contractors

iv) Reporting

The team will be responsible for preparing and delivering a consolidated regional report drawing on findings from in-country missions and the country reports, the team's technical experience, DFAT's strategic direction, Australia's comparative advantage, and a review of the literature.

The report is likely to take the form of a rapid situation analysis supported by recommendations identifying a limited number of options for Australian multi-country, country-led, and regional investment.

The final report will be around 15-20 pages long and will be delivered before the presentation.

The scoping study report should identify partner government and other stakeholder priorities, as well as establish where health security sits in their resourcing priorities; significant political economy issues, country needs and capacities, review possible investment areas, and identify areas that require additional inputs or information.

The report should include consideration of key issues/decisions, including:

- Priority areas
- Potential partners for implementation
- Options for resourcing/leverage
- Indicative funding

v) Recommendations

Within the scoping study report, the recommendations should address the following:

- a) **Options for country-led or regional interventions:** identifying evidence-based activities to strengthen health security systems to enable improved prevention, detection and response to communicable disease outbreaks; with a focus on IHR (2005) and OIE/PVS core capacities.
 - **Value for money:** 'best buy' interventions, based on evidence of impact and cost
 - **Achievable and sustainable outcomes:** an assessment of time and effort required to achieve results, and of likely sustainability after program ends.

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- **Potential partners:** including national government departments, multilateral organisations (see below), regional bodies, non-Government organisations, private sector organisations, other donors and academic institutions.
- b) **Potential entry points for Australian co-financed health security investments** in target countries through partnerships that could include:
- key multilateral partners including WHO, World Bank, ADB, Global Fund, Gavi, and identifying entry points in existing processes (e.g. costed JEE plan implementation, relevant regional implementation plan for health security [e.g WHO PahSEC]; financing assessment and support with World Bank); and
 - potential opportunities for collaboration and co-financing from other donors, particularly the US (USAID, USCDC), and possibly China, Korea and Japan.

D) Team composition, duration and phasing

Team composition

Up to three team members comprised of:

- Strategic Lead
- Technical specialist – epidemiologist/public health
- Technical specialist – public health/laboratory specialist

As well as:

- DFAT lead – Head, Centre for Health Security/Ambassador for Health Security/other senior DFAT officer
- DFAT Secretariat support

Duration and Phasing

| Date | Activity |
|----------------------|--------------------------------------------------------------------------------------------------------------------|
| 19 and 20 March 2018 | Consultations in Canberra; pre-departure meetings (HPB, CHS, PSS, desks, etc) Draft Methodology/ approach /plan |
| 21-29 March 2018 | Field work –Samoa (22-24 March) and Solomon Islands (26-29 March) |
| 9-19 April 2018 | Field work – Papua New Guinea (9-14 April) and Fiji (15-21 April) |
| 23-27 April | Team workshops and drafting mission aide memoire for DFAT |
| 4 May | Report finalisation |

Annex 2 – Information Sheet provided to key informants



PNG-Pacific Scoping Mission - PNG Portion

Background

It is estimated that the threat of epidemics and pandemics will increase over the coming decades. A major disease outbreak would have severe health and economic implications for the Pacific region – costing lives, and disrupting regional trade, travel, tourism and development.

Concurrently, existing and re-emerging infections like malaria, tuberculosis (TB) and dengue fever, childhood diarrhoea and acute respiratory infection also contribute greatly to the burden of disease in many Pacific Island countries (PIC) alongside an evolving non-communicable diseases (NCD) crisis.

The region is also experiencing growing problem of antimicrobial resistance (AMR), including in TB (MDR-TB), which threatens to undo decades of advances in the treatment of high burden diseases.

The Australian Government's Health Security Initiative for the Indo-Pacific region was launched in October 2017. It is implemented by a new part of the Australian Department of Foreign Affairs and Trade (DFAT) – the Indo-Pacific Centre for Health Security (CHS).

The Health Security Initiative will aim to strengthen country and regional capacity for prevention, preparedness, early detection and response to new and emerging infectious diseases (EID; such as Zika virus and new forms of influenza), existing infectious diseases currently impacting the Pacific region (such as dengue, malaria and TB) as well as drug-resistant infections. The Initiative also recognises the burden that NCDs place on health systems in the Pacific, and the often close links between NCDs and infectious diseases like TB and AMR bacterial infections.

PNG in particular is at risk from zoonoses such as highly pathogenic avian influenza and rabies that have been reported in neighbouring or nearby Indonesian provinces. These risks are potentially heightened by cultural activities and the close links between people living either side of PNG's and Indonesia's shared land border, as well as international shipping patterns. Emerging disease from wildlife sources is also a potential risk for PNG villagers that rely on hunting for a large part of their dietary protein.

Interventions resulting from this initiative will aim to strengthen health systems, which will protect against health security threats and also benefit the health system more broadly to address other health and human security concerns. Because about 70 percent of EIDs originate in animals before passing to humans, there will be an additional focus on animal health and zoonotic diseases.

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The Scoping Study

The Scoping Study is the first of two separate high-level missions – this one to PNG and the Pacific and the other to Southeast Asia. Each mission will make recommendations to the CHS on investment priorities, including for joint action with partner countries, other Australian government agencies, key development partners, international organisations and private foundations. This will be followed by a detailed design process for investments in key priority areas, with new projects and funding expected to commence in FY 2018/19.

Your contribution

An independent Scoping Study team will be visiting countries in the Pacific region during March and April 2018 to consult with senior officials, clinicians, public health managers and decision-makers and other stakeholders. The purpose of the consultations is to:

- Provide an overview of Australia's Health Security Initiative for the Indo-Pacific
- Explore partner governments' and other stakeholders' views on priorities to strengthen health systems for health security in the region
- Determine interest in participating in activities that could be country-specific, multi-country or region-wide.

Although major infrastructure requirements are not within the scope of the Health Security Initiative, we will coordinate and collaborate with other major development partners in delivering health security activities, and this may include discussions with other donors about infrastructure requirements.

The Scoping Study team will be interested to hear your views on topics including:

- What are the current arrangements for preventing, preparing for, detecting and responding to existing and emerging infectious diseases threats in your country? This could include policies and procedures, operations and infrastructure, human resources, and financing arrangements. It may encompass human and animal health systems, disaster management and epidemic response, laboratories, quarantine and points of entry/exit, private sector engagement, immigration and labour mobility and health financing.
- What are the major constraints or challenges you face in preventing and containing infectious diseases, and protecting health security? What are the capacity gaps, human resource and training needs, and systems strengthening that are required?
- What are your key priorities for strengthening health systems for health security? What would make a difference to your operations?
- What partnerships currently exist in the region to strengthen health security in your country? How effective have they been and how could we help to improve on them? Are there critical gaps needing urgent attention?

Mission Itinerary

Samoa – 21-24 March

Solomon Islands – 25-29 March

Papua New Guinea – 9-14 April

Fiji – 16-21 April

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Annex 3 – Principal activities and meetings during the Papua New Guinea mission

Summary of main objectives and outputs of the mission:

- 1) To provide an overview of the Australia’s Health Security Initiative for the Indo-Pacific
- 2) To explore partner governments’ and other stakeholders’ views on priorities to strengthen health systems for health security in the region
- 3) To determine interest in participating in activities that could be country-specific, multi-country or region-wide.

| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
|---------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------|
| Monday | | | | | | | |
| 9 April 2018 | | Hotel Transfer to Holiday Inn Express for JR, RD & NH. Then AHC car pick up at 2.30 and transfer to AHC. Abt to pick up AI & RC at airport and transfer to AHC. | Transfer Airport – Holiday Inn Express Hotel - High Commission | | Robin Davies +61 481 912 446 Nick Harris +61 466 560 472 Jimmie Rodgers Allison Imrie +61 406 610 730 Rob Condon | Arrive QF313 13:15 Arrive QF313 13:15 Arrive PX84 12:10 Arrive QF349 13:50 Arrive QF349 13:50 | |
| 9 April 2018 | 2.00 - 3.00pm 3.00 - 4.30pm 4.30- 5.00pm | High Commission car back to hotel | Political, Economic and Social context; Australian aid program priorities in health and agriculture sectors in PNG | DFAT | <ul style="list-style-type: none"> • HOM/ Benedict David (Minister Counsellor) / Will Robinson (Counsellor) • Public Policy and Health Security team • Sub-national teams & Program Strategy & Gender, Infrastructure & climate change teams | AHC – Annex Meeting Room 1 | Confirmed |

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| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments | |
|---------------------|----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------|--|
| 9 April 2018 | 7.00pm | High Commission car | Reception | | | High Commission | | |
| Tuesday | | | | | | | | |
| 10 April 2018 | 10.30 – 12.00 | High Commission car | Inter-sectoral Leadership Theme: Strategy & Leadership including Human & One Health Issues & Resources | NDoH NAQIA DAL | <u>National Department of Health (round table)</u> <ul style="list-style-type: none"> • Pascoe Kase, Secretary • Dr Paison Dakulala, Deputy Secretary, National Health Service Standards (Disease Control & Surveillance, Population Health and Labs) • Elva Lionel, Deputy Secretary, National Health Plan and Corporate Services (HR, Medical supplies, governance and partnership and performance monitoring and research) • Dr Sibauk Bieb (Executive Manager, Public Health Division) • Dr Goa Tau (Executive Manager, Medical Standards Division) | NDoH Conference Room | Confirmed | |
| 12:00 – 1:00 | | LUNCH | | | | | | |
| 10 April 2018 | 1.00 – 2.00 pm | | Priority diseases theme: Major Human Health Issues - TB & Malaria | NDoH Development Partners | <ul style="list-style-type: none"> • Dr Paul Aia – Manager TB (email: koltas44@gmail.com Mob#: +675 72075861 • Trilateral Malaria program – NDoH Mr Leo Makita (email: leo.makita@gmail.com) • Dr Tauhid Islam, Medical Officer, WHO • Tim Freeman – Rotary Global fund recipient for Malaria | NDOH | | |

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| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
|------------------|---------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| | | | | | <ul style="list-style-type: none"> • Wilfred Sikukula, Chief of Party: TB & Health Systems Strengthening, World Vision • Dr Zhang Zaixing (WHO team coordinator Outbreaks & Health Emergency) | | |
| | 2.15 – 4.00pm | | Public health (human) theme: Human & One Health Issues & Resources Technical – Laboratories, Infection Control & FETP training | NDoH | National Department of Health (Round table) <ul style="list-style-type: none"> • Dr Evelyn Lavu (Central Public Health Laboratory) Ph: +675 3248197; 3248199; M: +675 70521012. • Manah Dindi - Manager Health Information & Research Branch (email: manah.dindi2@gmail.com Mob#: 70585679) • Dr Mathias Bauri - Manager Immunisation Program – (mob#: 70056293) mathiasbauri@gmail.com • Johnnie Arava - Senior Technical Officer, Immunisation Program • Ms Jonila Kepas – Manager Health Promotion | NDOH | Additional information was provided on the Immunisation Program by 'Johnny' who has worked on the program for about 10 years |
| | 4.30 – 5.30pm | | Technical – Laboratories, Infection Control & FETP training | PIH | Pacific International Hospital <ul style="list-style-type: none"> • Mr Sandeep Shaligram, CEO, Mob: 7998 8000 Email: ceo@pihpng.com • Mirka Kasacova . crm@pihpng.com or +657 79988000 ext 157. • Dr Suresh Venkita, Medical Director, Chief Physician +675 7111 4003; 79988000 ext 247 | PIH Sec 105, Lot 2, Taurama, 3 Mile, Boroko | |
| Wednesday | | | | | | | |
| 11 April 2018 | POM-GRK | High | Research Theme: | PNG Institute of | IMR site visit. | IMR Goroka | |

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| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
|-----------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 08:45 Air Niugini PX960 GRK –POM 17:05 Air Niugini PX965 | Commission Car to transfer from Hotel to airport return. IMR car to transfer from Goroka airport to IMR return | Human Health Diagnostics and Research | Medical Research (IMR) | Meet heads of laboratory <ul style="list-style-type: none"> • Dr William Pomat (PhD) (email: william.pomat@pngimr.org.pg / wspomat@yahoo.com.au Phone#: +657 5322800/+675 5314 206) Research and surveillance team <ul style="list-style-type: none"> • Angela Kelly-Hanku, Senior Research Fellow; +675 7254 4882; E: a.kelly@unsw.edu.au • Bang Pham, Head of Population health and Demography Unit; E: bng.pham@pngimr.org.pg • Moses Laman – Vector-borne disease unit Madang • Dr Rebecca Ford – Infection and immunity inc microbiology • Ms Marinjo Jonduo – Environment and emerging disease unit (surveillance) | | |
| Thursday | | | | | | | |
| 12 April 2018 | 9.00-9.45 | High Commission car Hotel to AHC | Animal Health, Zoonoses and Border Security theme: Emergency Disease Response Preparedness | NDM AHC | <u>National Disaster Management Organisation</u> Martin Moses A/g Director, National Disaster Centre martinmose.ndc@gmail.com +675 76289180 Gerard Ng , UNDP humanitarian coordinator gerard.ng@one.un.org 72353092 Mary Konobo organised meeting with Mr Moses. | AHC | Mr Moses was delayed and couldn't make meeting time. Team met with Darian Clark at post who recommended 2 separate meetings with NDMO and Treasury. |

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| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
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| | | | | | Darian Clark - AHC First Secretary Program Strategy and Gender; +675 7090 0338; M: +675 7200 7862. | | |
| | 10.00 - 10.45 | High Commission car AHC to NDoH | | | Department of Health <ul style="list-style-type: none"> Dr Bieb - IHR focal point (Director Public Health) - (email: kari_tarupa@health.gov.pg phone#: 3013707) Department of Treasury Mr Diari Vele, Secretary EA Margaret Tobul, +675 3133506 margy_tobul@treasury.gov.pg | NDoH | Dr Bieb not available at agreed meeting time Unable to meet Treasury so organised to meet Dr Bieb instead |
| | 11.00 - 12.00 | High Commission car AHC to NAQIA | Animal & One Health Issues & Resources – Recap leadership meeting at NDoH. Technical – Laboratories, Surveillance, AMR, & Epi (FETPV) /paravet training | NAQIA | National Agriculture and Quarantine Inspection Authority David Tenakanai , General Manager Technical dtenakanai@naqia.gov.au +675 311 2100; +675 73484691 <ul style="list-style-type: none"> Warea Orapa, General Manager Operations; +675 311 2100 Gibasa Asiba, Chief Veterinary Officer, gasiba@naqia.gov.au; +675 73729907 Hunter Moi, Manager Policy and Planning Alphonse Bannick, Chief Agriculture Quarantine Officer – Operations Pius Clement, Manager, Animal Health Program Michael Areke, A/g Manager Compliance E: mareke@naqia.gov.pg | NAQIA HQ; Morea Tobo Road, 6 mile | |

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| | 12.00-1.00 | High Commission car | Biosecurity & Points of Entry Control (coordination, data & information sharing) | NAQIA PNG Customs | <p><u>National Agriculture and Quarantine Inspection Authority</u> As above</p> <p><u>Customs</u></p> <ul style="list-style-type: none"> • Morgan Lahui, Director Intelligence; +675 312 7592; M: +675 7314 1575, E: lahuim@customs.gov.pg. • Veronica Siove, Manager Liaison, Intelligence; +675 312 7540; M: +675 7212 7307; E: siovev@customs.gov.au; intelligence@customs.gov.au | NAQIA Conference room | |
| LUNCH | | | | | | | |
| 12 April 2018 | 2.00 – 3.00 (1 hr) | High Commission car NAQIA to UPNG | Education, Training & Research Theme | UPNG/NDoH/USAID (CDC) | <p><u>University of PNG - Faculty of Health Sciences/Medicine</u></p> <ul style="list-style-type: none"> • Prof Nakapi Tefuarani - Dean, School Med & Health Sc. Email: ntefuarani@gmail.com • Prof John Vince - Dep. Dean, SMHS. Email: johndvince@gmail.com • Dr Paul Sali -Dep Dean Policy and Admin; drpaulsali@gmail.com • Dr Victor Temple – Chair Biomedical Science; templevj@upng.ac.pg • Dr David Linge – Chair Clinical Sciences • Dr Philip Kigodi – Chair Health Sciences; Philip.kigodi@gmail.com • Mahmood Siddiqi – Chair | UPNG Med/Public Health School | |

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|---------------|-----------------|---------------------|---------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| | | | | | Dentistry; mssiddiqi@hotmail.com <ul style="list-style-type: none"> • Nancy Buasi – Chair Nursing; nbuasi@yhoo.com.au • Prof Georgia Guldán - Head of Public Health Assoc Prof Ikaú Kevau – Head of Surgery | | |
| | 3.30 – 5.00 | High Commission car | Multilateral and Bilateral DPs Theme: Strategy & Leadership, including priorities & coordination | WHO/WB/ADB | Multilaterals (round table) <ul style="list-style-type: none"> • WHO (Dr Luo Dapeng – email: luod@who.int); WR and Outbreaks and Health Emergencies; Dr. Zaixing Zhang, zhangz@who.int (NTD focal point); • Anup Gurung, • Tauhid Islam • WB Aneesa Arur • Andrew Cooper- Senior Operations Officer; +675 321 7111; M +675 7329 0227; acooper3@worldbank.org • Nicholas Rosemberg • ADB (Rob Akers – email: rakers@rphsdp.org.pg phone#: +675 3251275 | WHO Conference room | |
| Friday | | | | | | | |
| 13 April 2018 | 9.00 – 11.30 am | High Commission car | Moresby Hospital management and tour Laboratory and Clinical Facilities | POM General | PMGH [Human health] laboratory and clinical facilities Dr Umesh Gupta – CEO; +675 7942 7092; dr Gupta@pomgen.gov.pg Dr David Mokela – Medical Director, +675 76353888; david_mokela@pomgen.gov.pg Sr Carol Hosea - Director of Nursing | PMGH | |

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| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
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| | | | | | (email: carolhosea@pomgen.gov.pg phone#: 3248291) Central Public Health Laboratory <ul style="list-style-type: none"> • Dr Evelyn Lavu Ph: +675 3248197; 3248199; M: +675 70521012. • Karen Johnson – Laboratory Adviser; Karen.johnson@hhisp.org IMR PC2 Lab Medical School Rose – Lab manager Seri – Lab Technician; +675 7122 6372 | CPHL | |
| | 12.00 – 1.30pm | AI & NH High Commission Car to Kila Kila | | NAQIA | <u>Veterinary Laboratory (NAQIA) site visit – Kila Kila</u> Gibasa Asiba , Chief Veterinary Officer; gasiba@naqia.gov.pg . Rose Lisania – RLISANIA@naqia.gov.pg , A/g Head of Animal Health Laboratory +675 7807 5858; +675 7216 9663 Pius Clement , Manager, Animal Health Program Bridgit Kavana – Head of Parasitology; Bkavana@naqia.gov.pg Fova Naoka – Head serology, +675 (7397) 2662; fnaoka@naqia.gov.pg Elaine Hevoho – Serology Ehevoho@naqia.gov.pg | | |
| | 12.00 – 1.00 pm | RD, JR & RC High Commission car | Health funding, JEE, FETP, health security priorities & coordination | USAID (CDC) | <ul style="list-style-type: none"> • Steve Terrell-Perica (sit9@cdc.gov) • USAID Jorge Velasco jvelasco@usaid.gov | US Embassy | |

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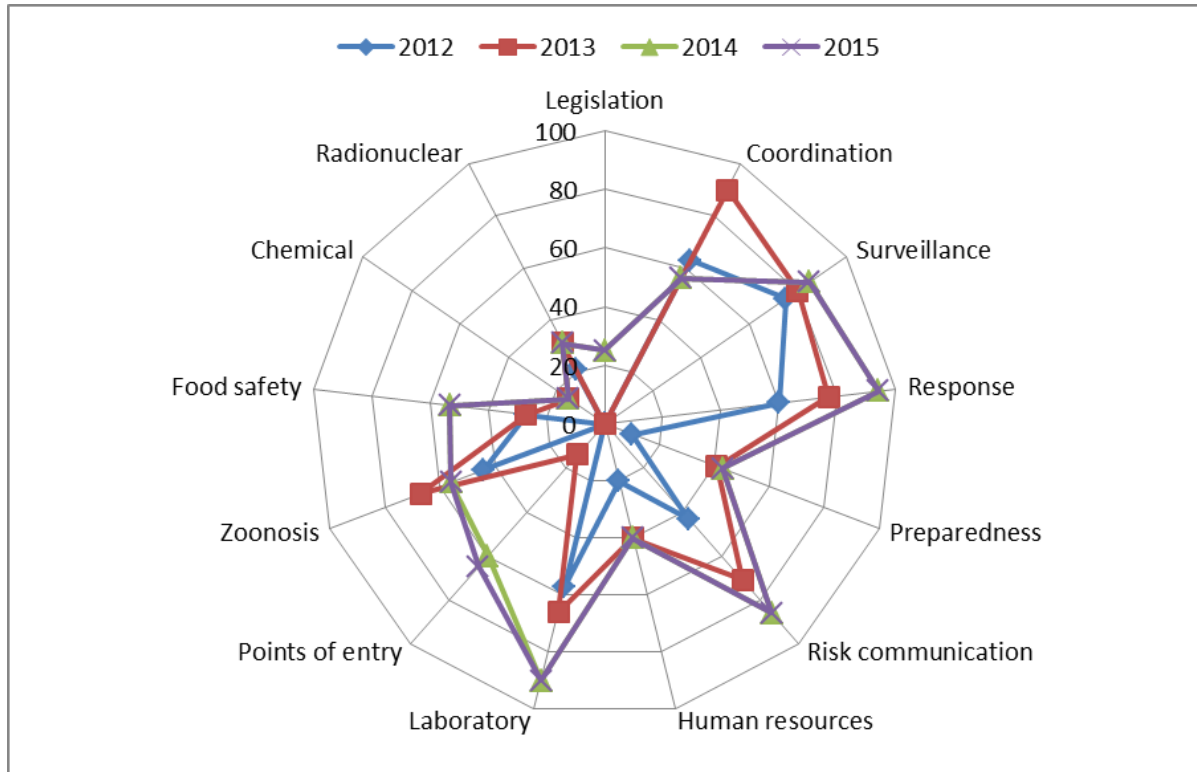
| Date | Time | Transport | Meeting Theme | Agency | People | Meeting Location | Comments |
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| Transfer and LUNCH | | | | | | | |
| 13 April 2018 | 2.00 – 3.30pm | High Commission car | Strategy & Leadership, including priorities & coordination | China | Key bilateral donors <ul style="list-style-type: none"> Sarah Maccana Sarah.MacCana@hhisp.org from Abt (for the trilateral malaria project) | AHC | Confirmed |
| | 3.30-4.00pm | | Civil society and private sector partners theme | NGOs | NGOs/private sector Red Cross <ul style="list-style-type: none"> Mr Uvenama Rova, Secretary General, Ph: 325 8577 / 325 7016 Mob: 7685 9211 / 7273 1737 Email: urova@ucpng.org.pg / uvr6057.pngrcs@gmail.com RSPCA – Helen White , General Manager Ph: 3252363/7198 2200/ 71960436 Mobile: 76984414 | AHC | Red Cross last minute cancellation |
| | 4.00 – 5.00pm | | | | <ul style="list-style-type: none"> Oil Search, Stephanie Copus-Campbell Stephanie.Copus-Campbell@oilsearch.com; +675 322 5766 m: +61 435655186 Kevin Miles , Manager Health Programs; Kevin.Miles@oilsearch.com | Oil Search | |
| | 5.45 – 7.30pm | | Health surveillance and Epidemiology training program | | National Department of Health (Round table) <ul style="list-style-type: none"> Berry Ropa, Surveillance and Response Mob: +675 71291609; email: bropa2013@gmail.com | Holiday Inn Express | |
| Saturday | | | | | | | |
| 14 April 2018 | 8.00 – 10.00 am | | Debrief with High Commissioner | AHC | Australian High Commission Bruce Davis – Head of Mission Ben David - Minister Counsellor Will Robinson - Counsellor | High Commissioner's Residence | |
| | 10.30 – | | Point of Entry Visit | | Biosecurity | Port Moresby | |

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| | 11.30am | | | | Dinah Maraga - NAQIA Operations at Airport, 70069179/3252093 <u>Customs</u> Samantha Wase - Customs Airport Operations; +675_70457024/3239327 <u>Medical Services</u> Elizabeth Endose - Emergency Medical Services PNG; Nurse & First Aid Provider at Airport +675 79100392/74810432 | International Airport | |
| | | Hotel Transfer | | | Robin Davies Depart QF58 13:25 Nick Harris Depart QF58 13:25 | | |
| | | | Scoping Team Writing Day | | | | |
| Sunday | | | | | | | |
| 15 April 2018 | 0630 | Transfer to Airport, Abt | | | Jimmie Rodgers Depart PX84 08:55 Allison Imrie Depart PX84 08:55 Rob Condon Depart PX84 08:55 | | |

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Annex 4 – Papua New Guinea’s self-reported performance, by core capacity and year, 2012-2015; State Party Annual Reports under the IHR Monitoring Framework



Source: World Health Organization Global Health Observatory data