Australian Doctors International

2018 Evaluative Report of ADI Programs in Western Province, Papua New Guinea

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Executive Summary

Papua New Guinea is developing health care nationally, however, health service delivery varies greatly between Provinces. Western Province ranks below the national standard of health indicators. Health care delivery in the Province is difficult due to challenging terrain, sparsely populated communities in remote areas and limited availability of medication, medical equipment and health workers. Health Centres and aid posts are frequently understaffed and lack adequate equipment and facilities. The National Department of Health (NDoH) recognise these issues in Western Province and have prioritised the improvement of rural health services and increasing numbers of health workers to meet population needs.

Australian Doctors International (ADI) supports the goals of the NDoH and the development of health infrastructure in Western Province. Health goals of ADI align with those of the PNG NDoH Key Result Areas:

- To improve service delivery;
- Strengthen health systems;
- Prioritise child and maternal health;
- Promote healthy lifestyles; and
- Reduce the burden of communicable diseases.

ADI seeks to improve the health of Papua New Guineans by conducting patrols to remote communities, increasing the clinical capacity of rural health workers and delivering primary health care to underserviced areas.

ADI doctors and clinical staff provide training for health care workers on patrol by conducting both group and case-based learning to improve clinical confidence and capability. It is important to facilitate ongoing clinical education to health care workers to ensure the continuity of quality healthcare delivered when an ADI doctor is not available on patrol.

Patrols in Western Province have delivered the following key outputs between 2017-2018:

- 176 days on patrol
- 2,172 clinical services delivered
- 47 health care workers trained
- Approx. 90 hours of public health education

This report evaluates the efficacy of current ADI programs and offers recommendations. Qualitative and quantitative analyses were conducted sourced from the existing ADI patrol database, previous patrol reports and evaluations, PNG and Western Province reports and policy documents, and survey responses from health care workers in the Province. Key illnesses of concern include musculoskeletal conditions, tuberculosis, and leprosy as they are common in the region. Vaccinations have been identified by the NDoH as essential to stopping the spread of communicable diseases. Previous ADI doctors have noted the necessity to improve the delivery and availability of vaccinations. Gender equity and disability healthcare are of significant importance to ADI, and particular observations and treatment are provided on patrols to target these issues. Analysis of current health service

delivery from ADI for these concerns has been conducted and recommendations are offered.

Recommendations are made on the organisation of patrols addressing the following areas:

a) Limited time to see all patients on patrols
b) Delayed, cancelled or reduced quality of patrols
c) Lack of time allocated to HCW training and community awareness
d) Lack of communication
e) Role of the ADI doctor whilst not on patrol
f) Inadequate facilities
g) Lack of medication

The impact of ADI training on the clinical capacity and confidence of local health care workers was reviewed. Specific challenges to HCW capabilities are outlined and further training on key areas is recommended. Surveys have been sent to health care workers in remote regions of Western Province where ADI training has been delivered. To date, only two responses have been received.

The future of ADI in Western Province entails the continued improvement of health service delivery to remote communities, and expansion of patrol locations to include regions in the Middle Fly. An ADI doctor will work with Kiunga Hospital and Urban Clinic when not on patrols, facilitating a stronger ADI presence in Kiunga, the base for ADI operations in Western Province. New initiatives to improve the delivery of health services to remote communities are being explored.

Section 1: Western Province Overview

Papua New Guinea (PNG) is classified by the United Nations as a lower middle income country.[1] PNG is ranked 22nd in order of Gross Domestic Product in the Asia-Pacific Region.[2] The infant mortality rate was 57 per 1,000 live births (2006), maternal mortality rate was 733 per 100,000 births, with a life expectancy of 57 years, and over 50% of children under the age of 5 reported as malnourished in 2008.[3]

The health system of Papua New Guinea was decentralised under the *Organic Law on Provincial and Local Level Government Act (1995)*, referring the management of provincial and regional hospitals, policies, standards and guidelines and the procurement of medical supplies to the National Department of Health (NDoH), whilst Provincial Health Services are responsible for rural health services to remote communities. Following the transfer of responsibility for rural health services to the provincial level of government, progress of the PNG health system has slowed.[4]

Western Province, located along the border of PNG and Indonesia, is ranked below the national average of health indicators.[5] There are multiple challenges to the development of health infrastructure in Western Province. The geography of Western Province including mountains in the North, flood plains in the South and limited road infrastructure outside of larger towns create difficulty for health service delivery. Paired with volatile weather conditions persisting throughout the year, this impacts the capacity of health services to be delivered to remote communities throughout the Province. Health service delivery is further impaired by a lack of skilled health workers in remote communities, with 336 Health Care Workers (HCW) for a population of 228,161.[5] Availability of medical supplies is poor, with only 51% of facilities nationally receiving adequate supplies in 2008.[3]

The Western Province district priorities as outlined in the 2018 Provincial and District Health Profiles[5] are:

- Improving hospital and rural health services
- Improving partnership with churches and private sector
- Get more health workers to meet population needs
- Make sure women have access to and give birth in a health facility
- Increase the number of children immunised against disease
- Refurbish and upgrade poor and unsafe infrastructure
- Expand services to address high levels of family incidence
- Increase family planning options: children by choice, not by chance

Australian Doctors International (ADI) is working toward health goals that align with the PNG National Department of Health's (NDoH) Key Result Areas from the National Health Plan 2011-2020[6] to improve child survival, maternal health, reduce the burden of communicable disease and promote healthy lifestyles. These goals align with the Sustainable Development Goals[7]:

Goal 1: No poverty
Goal 2: Zero hunger
Goal 3: Good health and well-being
Goal 5: Gender equality

Goal 11: sustainable cities and communities

ADI programs support district aims to improve hospital and rural health services, and partnerships with churches and the private sector. ADI provides a doctor on coordinated health service patrols in partnership with Horizon Oil (HO) and Catholic Health Services (CHS) to remote communities in Western Province. Patrols provide clinical support to local HCW and treat patients in the community. A key outcome of the patrols is to build the clinical capacity of HCW in remote communities so they can better manage in the absence of an ADI doctor. It is important to support the continued growth of HCW capabilities and access to resources to allow for a sustainable improvement in healthcare systems in Western Province.

During patrols, training is provided to HCWs in case-based and group sessions with the ADI doctor or health educator. HCW are educated on key topics that align with NDoH National Health Plan 2011-2020 and PNG standard treatment manuals to improve clinical competence and confidence. Over 2017-18 over 264 hours of case-based and group training were delivered on patrols to HCWs by an ADI doctor.

Overview of ADI Project in Western Province

Project Name:	Strengthening Western Province Health Services
Regions:	North Fly and Middle Fly, Western Province, PNG
Implementing Partners:	Catholic Health Services (CHS), Horizon Oil (HO)
Project Aim:	Improve the health of Papua New Guineans
Project Objective:	Increasing the clinical capacity of rural HCWs and delivering primary health care to underserviced remote areas
Project Outcomes:	1. ADI and our PNG health partners deliver outreach patrols that reach 100% of agreed rural and remote catchment areas at least once p.a. 2. 100% rural HCW receive training in key topics that align with NDOH National Health Plan (2011-2020) 3. PNG health partners demonstrate increased capacity in planning and implementing health programs
Project commencement date:	January 2016

Section 2: Methodology

A combination of qualitative and quantitative data has been collected from various sources:

- The existing ADI patrol database
- Previous patrol reports and evaluations written by ADI patrol doctors in WP (2017-2018)
- Relevant PNG and Western Province reports and policy documents
- Western Province Health Care Worker qualitative surveys

Section 3: Findings and Discussion

3a. Limitations

Information collated from various sources is limited in some areas due to a lack of reporting on patrols and limited recorded data in government reports associated with limited communication and data collection resources available in Western Province.

3b. Health needs of remote communities in Western Province identified on ADI patrols

Four Key health needs in remote communities in Western Province include Musculoskeletal issues, tuberculosis, leprosy and vaccinations. Each of these health needs are of particular importance as identified by the PNG NDoH and the ADI doctor. These issues were commonly reported on patrols and posed significant challenges to health service delivery.

i) Musculoskeletal Issues

Musculoskeletal issues were not identified as a health indicator in the 2017 or 2018 Provincial and District Health Profiles[5], nor in the 2009 DHS National Report[8]. However, complaints of chronic back pain and other musculoskeletal issues were the most prevalent presented health complaint on patrols in 2017-2018. ADI doctors on patrols summarised the precipitating factors of this recurring disease to be poor carrying techniques (specifically attaching bags to the top of the head to carry), not sleeping on beds, incorrectly lifting significant weights and not wearing shoes. Patrols cannot adequately address musculoskeletal issues as they are a chronic condition that requires sustained behavioural change for prevention and rehabilitation. Patrol reports indicated that HCW commonly treat musculoskeletal issues with minor analgesics which do not address the underlying problems previously mentioned. If this treatment continues it can lead to chronic musculoskeletal issues and inappropriate dependence on analgesics.

It is recommended that ADI addresses musculoskeletal issues by:

- Physiotherapists are included on all patrols as part of a multi-disciplinary team
- Safe lifting techniques are taught as part of public health education discussions with the community
- HCW and patients are encouraged towards alternatives to analgesics for treatment

ii) Tuberculosis (TB)

Tuberculosis is identified by the PNG NDoH as a key health issue, among the top five causes of death and hospitalisations in PNG.[9] The goal to control TB incidence by 2020, with a decline in Multi-drug Resistant TB (MDR-TB), is specifically stated in Objective 6.2 within Key Result Area 6 of the National Health Plan 2011-2020.[6]

TB was commonly reported on ADI patrols throughout Western Province. Environmental factors contribute to the prevalence of TB in remote communities of North Fly. Living conditions of families in overcrowded houses with poor ventilation contribute to the spread of TB. A majority of villages visited on patrols do not have facilities to adequately test for TB, so patients must attend Kiunga Hospital for diagnosis and registration to receive medication. This is difficult for most patients as they are incapable of making the long journey to Kiunga due to illness, lack of available transport or financial issues. As a result, many remain without diagnosis and are untreated. In the event that a patient is diagnosed and registered to receive treatment, villages frequently do not have a sufficient supply of TB medication, so the patient receives only partial or no treatment. Partial completion of TB treatment can lead to MDR-TB. No treatment continues transmission of TB from the infected patient to others in close social proximity.

It is recommended that ADI address the TB and MDR-TB in Western Province by:

- Setting up better protocol for diagnosis in remote villages:

  This includes coordinating with the local HCW prior to the patrol to bring in suspected TB cases to be seen by the ADI doctor on patrol. If possible, ADI health patrols should develop the capacity to diagnose TB on patrol to instigate treatment locally, not requiring patients to present to Kiunga hospital. Otherwise, provisionally diagnosed patients should then be taken with the ADI patrol to Kiunga to be formally diagnosed and registered for treatment, at no financial cost to the patient. If possible, ADI could assist with the transportation of medication to Health Centres and Aid Posts on patrols to ensure supplies in villages are maintained. Training sessions on patrols should include educating HCW in setting up, conducting, maintaining and reporting on Directly Observed Treatment Shortcourses (DOTS) programs in their communities to ensure patient compliance with their treatment regimen.

- Review of lab services in Western Province:

  ADI works with Becton Dickinson (BD), an international diagnostics company, in New Ireland Province of PNG. In New Ireland, HCW are trained by BD to improve lab and diagnostic skills for testing TB and leprosy in Health Centres and Aid Posts using sputum tests. A similar collaboration could be organised to train HCW in Western Province.

iii) Leprosy

Leprosy was identified as the third most common illness among presentations to patrol clinics in the Bosset region. ADI seeks to target the identification and treatment of leprosy

on patrols. Environmental factors contributing to the spread of leprosy in Western Province are living conditions in remote villages. Families live in dark, poorly ventilated houses in crowded condition. Most do not have beds, or access to washing and sanitary facilities. Challenges to treatment include transportation and communication. Similar to identification and management of TB, possible leprosy patients must travel to Kiunga Hospital to be diagnosed and register to receive treatment. This is not possible for most patients due to reasons previously mentioned. The Bosset Health Centre has an extensive register of all provisionally diagnosed leprosy patients in the catchment area, but all patients have either defaulted or not started treatment. HCW in Bosset have identified they are unsure of how to formerly register patients with leprosy and receive delivery of medication.

It is recommended that ADI target the treatment of leprosy by:

- Prioritising the diagnosis of leprosy on patrols, initially via visual diagnosis, then taking skin samples to Kiunga Hospital to confirm diagnoses and to register the patient.
- As Bosset has no high frequency (HF) radio or mobile telephone coverage, it is advised ADI patrols relay the Bosset leprosy register to Kiunga to access necessary medical supplies. ADI patrols can then delivery medical supplies on the following patrol. This may require more frequent patrols to the Bosset region.

iv) Vaccinations

The PNG NDoH identified immunisations as a vital strategy to combat the spread of communicable diseases in the Papua New Guinea Development Strategic Plan 2010-2030.[3] ADI doctors expressed concern in patrol reports that delivery of immunisations is inadequate in remote communities of Western Province. For example, in Mougulu (Middle Fly), no children were found to have received vaccinations in 2018. Other villages had no access to vaccines or a limited supply. Inadequate supplies of vaccines occurred as local HCW occasionally did not order vaccines through official channels, though in some instances, vaccines were ordered but were not delivered, or health centres lack adequate cold chain facilities for storage.

Health service delivery programs funded by the Ok Tedi Development Fund (OTDF), supported by the North Fly Health Service Development Program (NFHSDP) and the CMCA Middle and South Fly Health Program (CMSFHP), and implemented by Abt Associates, include delivery of immunisations and supporting cold chain maintenance in remote communities. NFHSDP and CMSFHP programs run outreach patrols to remote communities in Western Province, providing health services including vaccinations. Vaccine cold chain is maintained out of health centres with access to working vaccine fridges. Vaccines are then transported with ice-packs in vaccine cold boxes to peripheral villages surrounding the main health centre or aid post to conduct immunisations.[10] Portable cold chain access is available in 13 health centres in Middle and South Fly[11] and 28 health centres and aid posts in North Fly[12]. OTDF funded programs delivered 2,387 immunisations through outreach patrols, including Pentavalent vaccine (HiB, dTP, HepB), Measles and Oral Polio vaccines in 2015.[4]

It is recommended that ADI conduct immunisations on patrols, using a similar model to NFHSDP and CMSFHP outreach patrols. Local HCW should be trained in administering

immunisations and maintaining the cold chain of vaccines, in order to maintain immunisation programs in the absence of an ADI doctor.

3c. Evaluating ADI 'Programs Logical Framework'

ADI has developed a Logical Framework to evaluate the progress of programs in Western Province by measuring Key Performance Indicators. A full table of results of ADI project outcomes from 2017-2018 can be seen in the Appendix. Indicator results of note will be analysed below.

i) Performance Objective 2 (PO2)

ADI's 'Performance Objective 2' target: 65% of HCWs from PNG health partners (CHS and HO) receive training from an ADI doctor or health educator per annum.

The percentage coverage of ADI HCW training per annum was calculated for both HCWs affiliated with ADI health partners, and for the whole of Western Province. In 2018, ADI exceeded PO2 target, training a total of 78% of health partner HCWs in Western Province on patrols. ADI's current reach to HCWs in Western Province represents an estimated 14%. Therefore, there is still a significant training need to reach all HCWs in Western Province. It will require significant expansion of ADI health training operations to train 100% of HCWs in Western Province.

ii) Outcome 2: Case-based or group training delivered by ADI doctor

ADI's 'Outcome 2 P-H' target: 60 hours of case-based or group training delivered by a doctor or health educator per annum.

This target was achieved in 2017 and 2018, with 66.2 hours and 198 hours respectively of case-based or group training delivered to health partner HCWs in Western Province. The significant increase in time spent on HCW training between 2017-2018 reflects the commitment of ADI to increase the clinical capabilities of HCW in order to improve the function of health systems in remote communities in the absence of an ADI doctor.

iii) Outcome 1: Number of health partner's health facilities in North Fly and Middle Fly visited per annum

ADI's 'Outcome 1: R-HFV' target: 80% coverage of health facilities in North Fly and Middle Fly, as defined through partnership agreements, are visited per annum.

A total of 25 health facilities are defined within ADI partner agreements with Horizon Oil (HO) and Catholic Health Service (CHS). Of these facilities, ADI patrols reached 40% of communities in 2017, however, increased coverage of the catchment area to 44% in 2018. These statistics however do not reflect the ADI presence in communities not stipulated in partnership agreements, such as patrols to Mougulu

in Middle Fly. Although ADI patrols make a significant impact to the health of communities visited on patrols, coverage of ADI patrols across the whole of Western Province remains low at 11% in 2018.

iv) Outcome 1: Number of patrols that visit remote areas per annum

'Outcome 1: R-PVRA' target: 90% of patrols visit remote areas. 'Remote' is defined as over 4 hours of travel time to reach the health facility.

ADI has consistently exceeded this target in 2017 and 2018, as 100% of outreach patrols in Western Province are conducted in remote areas.

v) Output 1.3: Percentage coverage of visited villages that received public health education on patrol

'Output 1.3: CPHE-C' target: 80% of villages in patrol catchment area receive public health education.

Public health education is a vital part of improving the health of a community. Although public health education has been included on some ADI patrols, it was only delivered to 20% of villages visited in 2017. Coverage doubled in 2018 to 40%, however, this positive trend will need to continue to reach the target of 80% coverage. Greater emphasis should be place on public health education on patrols by allocating adequate time to conduct community seminars led by the ADI doctor, health educator or community HCW to ensure it is conducted on all patrols.

vi) Output 1.3: Hours of public health education an awareness delivered

'Output 1.3 CPHE-H' target: 25 hours of public health education and awareness delivered per annum.

Although the target of public health education coverage has not been met, the total hours of public health education delivered on ADI patrols exceeded the target in both 2017 with 47.4 hours, and in 2018 with 43.8 hours. This indicates that communities that are receiving public health education receive significant time delegated to public health awareness.

vii) Output 1.3: Number of community members attending public health education

'Output 1.3 CPHE-CM' target: 1600 individual community members attend public health education per annum.

The number of community members in attendance at public health education on ADI patrols greatly exceeded this target in both 2017 and 2018. 3,521 community members in 2017 and 3,082 in 2018 attended public health education on ADI

patrols. This indicates a community interest in public health awareness and a willingness to receive further information to improve the health of their community.

3d. Focus on disability: How ADI is meeting this health need

People with disabilities in PNG are subject to stigma in their communities, some are not permitted to leave their homes due to family shame regarding their condition as disability can be associated with a violation of cultural norms. A lack of awareness and resources to manage disabilities perpetuates this stigma in remote communities. PNG National Disability Resource and Advocacy Centre[13] estimate only 2% of people with disabilities in PNG receive any health care services.

The PNG National Policy on Disability[14] outlines three key objectives to achieve stronger infrastructure, healthcare systems and policy implementation to promote equality and improve the standards of living for people with a disability.

1. Promoting and protecting the rights of Persons with Disabilities via organised networking and support for advocates and change agents.
2. Improving delivery of disability services, using inclusive development and Community Based Rehabilitation approaches to positively impact Persons with Disabilities.
3. Improved institutional framework, performance management and financing arrangements focussed around implementing the policy action plan.

ADI is committed to working towards improved health care delivery to people with disability. Patrols currently address this health care need by coordinating a multi-disciplinary team on as many patrols as possible, including a Callan Services disability officer or physiotherapist from CHS. The doctor on patrol seeks out house-bound patients and attends house calls to those who cannot visit the clinics.

Recommended strategies to further address the delivery of healthcare to people with disability in remote communities of Western Province include:

- Improving data collection and reporting on patrols regarding healthcare access and services, to evaluate the efficacy of programs by ADI and implementing partners
- Increasing awareness of disability and decreasing stigma via community education on patrols
- Continue including a disability specialist or physiotherapist from ADI partners on as many patrols as possible
- Facilitate training for rural HCW on managing patients with disabilities

3e. Focus on gender equity: How ADI is meeting this health need

The PNG Development Strategic Plan 2010-2030[3] identifies gender inequity as a key health concern in PNG. Women and children are commonly victims of domestic violence, however, exact statistics are unknown as reporting incidents is rare due to cultural acceptance and

fear. ADI patrol reports identified a cultural acceptance of family violence in some remote villages. Symptoms of long-term abuse were noticed in multiple women presenting with chronic musculoskeletal pain from previous injuries that were not treated. The NDoH has expressed a zero tolerance of domestic violence.

Gender disparities in education are also significant, with women accounting for 37% of higher education enrolments.[3] ADI patrols reported that a precipitating factor of women leaving school earlier than men was a high proportion of women bearing multiple children before the age of 20.

The PNG NDoH recognises that national development benefits from greater gender equality in the workplace and in communities, and aims to protect women and children from violence, ensuring their right to education and in the workplace.[3]

The ADI Gender Equity Policy is dedicated to achieving Sustainable Development Goal 5: Achieve gender equality and empower all women and girls. Where possible, patrols record gender data to evaluate the effectiveness of ADI programs on gender equity and to more effectively target programs in the future. The ADI program approaches are analysed and assessed through the CARE Gender Equity Continuum. Incidence of domestic violence reported on patrols are also recorded, and victims are counselled by the patrol doctor to raise awareness.[15] ADI aims to have at least 50% of patrol staff being women, yet are currently exceeding this target, as 56% of patrol staff in 2018 were female. Consideration is currently being taken to include a gender equity officer on patrols to provide specific training to HCW.

The following actions are recommended to target gender equity:

- Greater emphasis on community awareness of family planning, or family spacing, to reduce the number of children young women have in short periods of time, impacting their ability to complete education. Time should be allocated on each patrol to host community talks about public health topics, including family planning and sexual health. It was suggested by ADI patrol doctor that these seminars should be led by a PNG national or local community leader as the topic is culturally sensitive and may be received better in this manner.
- Where possible, men and women should be presented with long-term contraceptive options to be delivered by the ADI doctor.
- HCW should be trained in counselling victims of family violence, conducting education on sexual health and delivering long-acting contraceptive implants.

3f. Organisational issues presented in ADI patrol reports 2017-2018

a) Lack of time to see all patients on patrols

A recurring issue reported by patrol doctors was the lack of time to see all patients on patrol. Although attendance at outreach clinics varies greatly, the doctor can be inundated with large numbers of patients and unable to review all cases.

Recommendations:

- If other health staff are present on patrol as part of a multi-disciplinary team, organising a triage to allocate patients to the different health staff would be effective.
- The patrol organiser should communicate with the local HCW prior to the patrol to find out an estimated number of patients and key health concerns. This would allow the patrol coordinator to organise the clinic for an adequate amount of time, and recruit necessary health staff for the multi-disciplinary team.
- On previous patrols, medical students from Griffith University attended and assisted the ADI doctor. This was a great help in reducing the work-load of the ADI doctor, and exposed the students to medicine in remote communities abroad. Arrangements with Griffith University could be further explored and re-affirmed to ensure the continued involvement of medical students on outreach patrols in Western Province.

b) Delayed, cancelled or reduced quality of patrols

Patrols are frequently delayed or cancelled due to various reasons. In 2018, of the 27 scheduled patrols ADI and CHS conducted only 21, with 6 cancellations. Only 50% of the 21 conducted patrols arrived on or close to their scheduled date. Patrols coordinated with CHS are reliant on government funding which can be delayed, resulting in the delay or cancellation of an organised patrol. Patrol reports revealed that some patrols consisted only of the ADI doctor and a skipper due to clashing health care needs in Kiunga requiring the attention of health staff. This reduces the quality of health services delivered on patrol.

Recommendations:

- Reduce reliance on government funding by ADI providing necessary funds needed to make a patrol happen.
- Aim to have a multi-disciplinary team staffing all patrols to ensure the best quality of health services are delivered, however, it the primary objective is to have a patrol take place even if the team consists of only the ADI doctor and a skipper.

c) Lack of time allocated to HCW training and community awareness

In 2018, 60% of villages visited by ADI patrols did not receive public health education. It was commonly reported that villages were unaware that the patrol was visiting, so once the patrol arrived it would take considerable time for crowds to gather in order to conduct public seminars on health education. The time spent waiting for community members to arrive took up time that could have been allocated to seeing patients or training HCW. However, instances of the village being prepared for the patrol can also present challenges. An influx of patients presented to the ADI doctor on arrival means a large proportion of the patrol is focussed on treating patients, which reduces the time available for group-based HCW training and community public health education.

Recommendation:

- Lack of communication between patrol organisers and local HCW is a recurring issue. It is recommended that patrols should discuss with the local HCW prior to the patrol the expected number of patients and health needs in order to coordinate adequate time for treating patients. Health care workers could be instructed in triage of patients presenting to make consultations by the doctor more efficient. A schedule should be devised prior to the patrol which allocates specific time for HCW training and community public health education.
- ADI should invest in a HF radio in order to contact health centres and aid posts that do not have access to mobile telephone service.

d) Lack of communication

An overarching challenge of organising patrols is a lack of communication between patrols, local HCW and community members. Communication technology is very limited in some remote areas of Western Province, as 3 communities patrolled do not have access to radios or mobile telephone coverage. This makes informing local HCW of planned patrol dates, incredibly difficult. In some reports, HCW were informed of patrols yet did not distribute this information to the wider community or surrounding villages, resulting in long periods of waiting for crowds to emerge for treatment, and fewer individuals accessing the health services.

It is unclear at this stage what role ADI could play in addressing this issue, however it is an important issue worth noting.

e) Role of the ADI doctor whilst not on patrol

ADI patrol doctor identified a sense of uncertainty as to their role in health care delivery in Western Province whilst not on a patrol. It is unclear if the doctor should engage in organisation of patrols, or work in the Kiunga Hospital or Urban Clinic. If the duties of the doctor are not clearly defined, it can result in an inefficient use of time whilst on placement.

Recommendation:

- When ADI doctor is not on patrol, they should dedicate available time to working at the Kiunga Hospital and Urban Clinic, as these facilities are understaffed.
- If patrol services expand further, it is recommended that a health manager or clinical educator is also deployed to assist the ADI doctor with organisation of patrols.

f) Inadequate facilities

The quality of health infrastructure varies greatly between each aid post and health centre in Western Province. Most facilities visited by ADI patrols have poor health infrastructure; 9 have no running water at the clinic, 4 have no power at the clinic, and 9 are insufficiently furnished to conduct consultations. Multiple health centres were reported to have structural issues, rotting floors and broken solar panels. On some previous patrols a carpenter and plumber have been included as part of patrol team to aid in repairs to health facilities.

Recommendation:

- Patrols should include a carpenter and plumber as part of the multi-disciplinary team.

g) Lack of Medication

Availability of medicine is poor throughout Western Province, and supplies differ between health facilities. All health centres and aid posts visited on outreach patrols were in need of medication supplies. This issue is particularly problematic for TB and Leprosy patients, and patients with chronic illness that require constant medication for their conditions. Poor medication supplies is due to a lack of consistent ordering of medication through official channels by HCW. Some facilities have ordered medication through official channels yet none have arrived. This dissuades HCW from continuing to order medications that do not arrive.

Recommendations:

- Encourage local staff to continue to order medication through official channels
- ADI should become more involved with facilitating the transport of medication to remote villages on patrols. This would involve ADI collecting necessary and available medication from Kiunga hospital and transporting it to remote health facilities on patrols.

3g: ADI influence on the clinical capacity and confidence of health partners

ADI health partners include HCWs who are stationed at health facilities within the catchment area agreed upon in partnership agreements with HO and CHS. ADI aims to increase the clinical capabilities and confidence of HCW by providing case-based and group training sessions whilst on patrol. Challenges to HCW training have been acknowledged in patrol reports. A lack of consistency with training topics and opportunities for HCW to receive training on patrols has resulted in varying capabilities of HCW within the catchment. A key concern conveyed by HCW is their lack of recent training, and have expressed a desire to receive more regular training in the future.

ADI doctors have identified the following challenges to HCW capabilities in patrol reports:

i) Misdiagnosis and mistreatment

HCW commonly misdiagnosed or mistreated illness, particularly chronic illnesses. Some HCW expressed to the ADI patrol doctor they did not fully understand chronic illness and lacked the knowledge of how to treat and manage illness over long periods of time.

i) Misuse of antibiotics

Evidence was found on patrols that many HCW used limited supplies of antibiotics to treat conditions not responsive to this treatment, such as treating musculoskeletal pain. Whilst consuming limited supplies, poor antibiotic stewardship predisposes patients to antibiotic resistance and creates shortages of antibiotics for infectious diseases.

ii) Over-prescribing analgesics

Analgesics were frequently prescribed to patients suffering from chronic musculoskeletal issues, without addressing the underlying causes of the illness by teaching safe lifting techniques or instructing physical therapy such as exercises. Inappropriate use and dependence on analgesics has many health complications while also not adequately managing musculoskeletal disease.

iii) Ordering medication

HCW often would not order medication through official channels, for multiple reasons. Some believed medication should be brought to them by patrols, others did not know how to order through official channels and others had not received ordered medication for a long time and decided there was no use in continuing to order medication. This results in a lack of medical supplies at health facilities.

Recommendation:

- These topics be worked in to the Western Province Partner Capacity Strengthening plan
- These topics should be prioritised taught to HCWs in group and case-based training

Section 4: Analysing ADI Project Objectives 1, 2, and 3

ADI has constructed 3 Key Project Objectives targeted at improving the clinical capability and confidence of local HCW so health systems can manage better in the absence of an ADI doctor.

Project Objective 1: 75% of HCW from PNG health partners reported improvement in confidence and clinical ability

Surveys were sent to health care workers in remote areas of Western Province to gauge the impact of ADI training on HCW capability and confidence. Responses from two HCW have been returned so far. The first response indicated ADI group and case-based training had increased their clinical capability, and both respondents believed the training was helpful. Further surveys will be analysed to understand the impact of ADI training on HCW as responses are returned.

Project Objective 2: 65% of HCW from PNG health partners receive training from doctor or health educator per year

This goal was exceeded in 2018, with 78% coverage of HCW from PNG health partners in Western Province receiving training from an ADI doctor. Although a significant portion of HCWs from the ADI catchment area received training in 2018, total coverage of HCWs in Western Province that ADI currently reaches and so can receive training is only 14%. If a greater portion of HCW from across Western Province are to be educated by ADI, a significant upscaling of training will have to be implemented.

Project Objective 3: At least 50% of HCWs receive training come from remote areas.

A priority of ADI is to target health service delivery to remote communities. Project Objective 3 was fulfilled in 2018 with 92% of HCW that received training coming from remote areas. This demonstrates ADI's commitment to this goal.

Recommendations to improve HCW capabilities:

- Make HCW training a priority on patrols. Specific time on patrols should be allocated to training HCW on pre-determined topics that are taught in sessions on all patrols. This training should include clinical supervision and teaching by the doctor, having HCWs sit into consultations to learn history-taking, examination, clinical reasoning and prescribing. Patrols may need to be extended in order to provide sufficient time for in-consult teaching and to adequately cover all necessary content in training sessions.
- Ultimately, a preferable patrol schedule would involve training for HCW taking place before the patrol team sees patients. Prior to the arrival of the patrol, HCW from the outlying aid posts will be invited to attend an intensive training course for 1-2 days at the main healthcare facility of that cluster, delivered by an ADI doctor or health educator on the first days on patrol. This will be conducted annually to ensure all HCW maintain clinical capability and progress can be followed up. This model will reduce travelling time for HCW, as currently all in-service training is held in Kiunga or Rumginae, the content and frequency of training can be regulated, and multiple HCW from surrounding communities can be trained in a single session on patrols. This suggestion correlates with the request of a HCW in a remote health care facility in Western Province. One respondent of the ADI survey, sent to HCW in remote communities of Western Province, stated that they would like a day to be planned and organised by the ADI doctor for the HCW training sessions.
- It is also recommended that the ADI doctor is trained for clinical teaching before being deployed. A key skill for the ADI doctor to acquire is the Teaching on the Run (TOTR) program, which prepares the doctor to conduct case-based training, teach HCWs whilst treating patients. Online TOTR interactive workshops for clinical supervisors are delivered by Teach Educate Learn Lead (TELL) Centre facilitators from the faculty of Health and Medical Sciences, University of Western Australia. Training workshops include areas such as teaching, assessment, feedback, supporting learners and group teaching.[18] This training could be remotely accessed and completed by the ADI doctor prior to arriving in PNG.
- Including a health educator in the multi-disciplinary patrol team should be considered.

Section 5: The Changing role of ADI in Western Province

The programs delivered by NFHSDP and CMSFHP in partnership with Abt Associates and the OTDF are finalising in 2019. This presents a health need for services withdrawn that were previously provided by NFHSDP and CMSFHP. The model of Abt Associates outreach patrols provides various clinical services, including immunisations and family planning. Immunisations predominantly include Pentavalent vaccine (HiB, dTP, HepB), Measles and Oral Polio vaccines.[4] A key focus of Abt Associates patrols is maternal and child health, as such, family planning is provided on patrols. Sexual health education is delivered to communities, as well as the provision and insertion of long-acting implants and other forms of contraception.[4]

Intensive HCW training courses are funded by OTDF and implemented by Abt Associates in partnership with Marie Stopes. In 2016, a two-week intensive training course was delivered by Marie Stopes at the Rumginae Community Health Worker School to 13 HCW participants. Training topics focussed on maternal and child health, and implanting long-acting contraceptives.[16] The following year, a supervisory patrol was conducted to survey the skills of HCW that received the intensive training a year prior. Once observed on the supervisory patrol, the HCW were certified as clinically capable of providing these services.[17] ADI follows a similar model of HCW training in New Ireland Province, partnered with Marie Stopes.

The NFHSDP and CMSFHP provide various other health programs that support health services in Western Province including radio installation to remote communities, vaccination programs, donating vaccine ice-pack freezers, building staff houses, delivering community public health education sessions, distributing condoms and providing long-acting contraceptive implants.[10]

As these services will be coming to an end in 2019, it is recommended that ADI programs are adjusted to help fill the need for health services that are being withdrawn.

Recommendations:

- Expand the number of health centres visited by ADI on patrols to include those previously serviced by Abt Associates patrols. Abt Associates conduct outreach patrols to communities in Middle and South Fly, as well as North Fly. Accommodating the health services being withdrawn will require a significant increase of ADI presence in Western Province. Balimo, a community in Middle Fly could be an optimal location to initially expand ADI coverage, basing outreach patrols from the health centre. Funding from ANCP could be used to facilitate this expansion of health services into Middle Fly, and eventually South Fly.
- Immunisations should be a routine clinical practice on each patrol, and a record of each individuals' vaccine history should be kept to ensure a greater coverage and consistency of vaccinations in Western Province.
- In regards to HCW training, patrols should be extended to accommodate in-consultation teaching and learning and to include an intensive in-service training course during the first days of the patrol. Further partnership with Marie Stopes in

Western Province should be explored, in particular to include maternal and child health and implanting contraception modules into the training program. Partnership with BD diagnostics to aid in diagnostics and lab skills training should also be implemented.

- Supplying and transporting necessary medical equipment and medication on patrols should be considered. Poor access to medication and medical equipment is prevalent throughout Western Province and local HCW are often unable to transport and/or fund replenishing stocks of medication and medical equipment.
- Continue to cultivate partnerships with churches, communities and non-government organisations to enable a greater focus on coordinating a multi-disciplinary team on each patrol. The patrol team should include representatives from Marie Stopes to train HCW and supervise insertion of contraceptive implants, Callan Services for eyes, ears, disability and physiotherapy services, and Good Samaritan to focus on HIV and sexual health.

Section 6: The Future of ADI in Western Province

ADI plan to continue improving the logistics and coordination of current patrols throughout Western Province. This includes further expanding the locations of outreach patrols. In 2018, a successful pilot patrol to Mougulu in Middle Fly was conducted, and marks the beginning of expanding patrols into Middle Fly.

There will be a stronger ADI presence in Kiunga in 2019, as the patrol doctor will be based in Kiunga Hospital and Urban Clinic when not on patrols. As both facilities are understaffed, the addition of another doctor will positively impact the health service delivery of both healthcare centres.

A new initiative of supporting a flying doctor service to facilitate transport on patrols is currently under consideration. ADI values incremental implementation of expanding into new areas of Western Province, to better foster community engagement and lower risk testing of patrol models, routes, schedules and partnerships. ADI recommend an incremental approach to the new initiative. This would involve a period of 6 months to establish pilot patrols to new communities, followed by a growth phase over 12 months, to extend the geographical reach of patrol locations and then add a second patrol team. After a further 6 months, a third patrol team would be added. Once this model is consolidated, it would involve the three patrol teams consistently running and well supported.

It is recommended that the following initiatives are a priority in 2019:

- Make HCW training on patrols a priority, allocating specific time on patrols to complete case-based and group training. It is advised 1-2 days on patrol are dedicated to HCW training, in which pre-determined topics should be taught to ensure all HCWs are receiving a similar standard of training. This will support ADI's goal to increase the clinical capability and confidence of HCWs so health care services can run better in the absence of an ADI doctor.

- Try to coordinate more frequent patrols to previously visited communities, this may include ADI redirecting funding to help support CHS funds for outreach patrols.
- Continue patrols to Mougulu and expand outreach patrols into Middle Fly to address the health service delivery need following the conclusion of Abt Associates outreach services in Western Province. Conducting a pilot patrol to a community from which outreach patrols can be based from in the future is recommended. Balimo could be an optimal location to base outreach patrols in Middle Fly.

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Appendix

Objectives	Performance Indicator	Measurement and Data Sources	Critical Assumptions
Improve the health of Papua New Guineans by increasing the clinical ability of rural Health Care Workers (HCW) and delivering primary health care to underserviced remote areas	**PO1**: **75%** of HCW from PNG health partners reported improvement in confidence and clinical ability *Not recorded*	Clinical/confidence survey of HCW	Survey conducted as part of NI project evaluation (2011-2015) is used as baseline
	PO2: Target: **65%** of HCWs from PNG health partners receive training from doctor or health educator per year (and cumulative coverage is 100%) ***Out of catchment:*** 2017: *not recorded* 2018: 47/60 = **78%** ***Out of WP:*** 2017: *not recorded* 2018: 47/336 = **14%**	Clinical training forms & in-service attendance sheets	
	PO3: **At least 50%** of HCWs receiving training come from remote areas 2017: *not recorded* 2018: **92%**	Clinical training forms & in-service attendance sheets	Remote defined as between 4 and 7 hours travel time. Very remote = greater than 7 hours travel time (either boat, road, flight, walking or combination)
Outcome 1 **ADI and our PNG health partners' patrols reach 100% of agreed rural and remote catchment areas at least once per annum to facilitate PO1, PO2, PO3**	**R-HFV**: **80%** coverage of health facilities in NF & MF visited per annum ** ***Out of catchment:*** 2017: 10/25 = **40%** 2018: 11/25 = **44%** ***Out of NF + MF:*** 2017: 10/ 82 = 12% 2018: 13/82 = 16%	Patrol summary reports	** as defined through partner agreements To define new catchment areas as we establish new partnerships

	Out of WP: 2017: 10/119 = 8.4% 2018: 13/119 = 11%		
	R-TPD: **165** of total patrol days per annum 2017= **83** 2018 = **93**	Patrol summary reports	Weather patterns allow access to remote areas (ie not enough rain = river too low to travel, too much rain = dangerous conditions)
	R-PVRA: **90%** of patrols visit remote areas 2017 = **100%** 2018 = **100%**	Patrol summary reports	Remote defined as over 4 hours of travel time
Output 1.1 **Multidisciplinary health services are available on patrol**	**MHS-IS**: **50%** of patrols have a 70% member composition matches to 'ideal staff' composition as defined for each province, sourced from PNG partners 2017: 1/11 = **9%** 2018: 5/24 = **21%** of patrols had 70% or higher composition match to 'ideal staff' patrol	Patrol summary reports	Range of multidisciplinary staff available in each patrol area FP officer is equipped with modern family planning commodities
	MHS-MPT: At least **50%** of multidisciplinary patrol team are women per annum 2017 = **50%** 2018 = **56%**		Supports our Gender Equity policy
Output 1.2 **ADI doctor and multidisciplinary health staff deliver primary health care services on patrol**	**PHC-CSD**: **700** clinical services by ADI doctor/nurse by age, gender and disability 2017: **978** Men: 344 Women: 502 Children: 132 2018: **1194** Men: 330	Patrol record sheets	ADI's partners provides auxiliary health staff to join patrols

	Women: 430 Children: 434 Women + girls: 641 (54%)		
	PHC-CSPS: 3,000 of clinical services by each of the patrol staff by age, gender and disability 2017: *Not recorded* 2018: **5284** Men: 1430 Women: 1778 Children: 2076 Women + girls: 54%	Patrol record sheets	Data collection supports New Ireland Provincial Health information needs, and in turn the NDoH Key result areas, and National Health Information System, and Aust DFAT
	PHC-HC: 90% of house calls conducted for those unable to attend clinics as identified by village chief or local health worker 2017: *Not Recorded* 2018*: Not Recorded*	Patrol record sheets	Supports our Disability and Impairment policy and Gender Equity policy
Output 1.3 **90% of rural villages visited by patrol receive public health education and awareness on key topics**	**CPHE-C**: **80%** of villages in patrol **catchment area** receive public health education 2017 = 5/25 = **20%** 2018 = 10/25 = **40%**	Patrol record sheets Note: 25 villages in catchment area	ADI's partners provide auxiliary health staff to join patrols
	CPHE-S: **15** schools receive public health education 2017: **4 schools** 2018: **9 schools**	Patrol record sheets	Rural villages are open to receiving health education (ie Family Planning)
	CPHE-H: **25** hours of public health education and awareness delivered Actual: 2017 = **47.4hrs** 2018=**43.8hrs**	Public health education record sheets	
	CPHE-CM: **1600** individual community members attend public	Public health education record sheets	Note: use the biggest number from each of the topic areas.

	health education 2017 = **3521** 2018 = **3082**		
	CPHE-WG: **900** individual women and girls attend public health education 2017: *Not recorded* 2018: **1510** women + girls attended	Public health education record sheets	
	CPHE-RT: **100%** of outreach health patrols health education include topics that address priority health outcomes identified in NDOH National health plan (2011-2020) 2017 = **100%** 2018 = **100%**	Public health education record sheets	Topics taken from KRA 4 to 7
Outcome 2 **Rural HCWs receive training in key topics that align with NDOH National Health Plan (2011-2020) and PNG standard treatment manuals to facilitate PO1, PO2, PO3**	**T-NHCW**: **40** HCWs receive training from doctor or health educator on key topics per annum 2017 = *Not recorded* 2018 = **47 HCWs** received training	In-service training records & clinical training forms	HCWs can be located and available to give feedback
	T-PHCW: 65% coverage of HCWs who receive training from doctor or health educator per annum **Out of catchment:** 2017: *Not recorded* 2018: 47/60 = **78%** **Out of WP:** 2017: *Not recorded* 2018: 47/336 = 14%	In-service training records & clinical training forms	
	T-HCWI: 75% of HCW surveyed report an improvement in confidence and clinical	Post-training follow-up survey	

	ability at least 6 months after training Target: 75% *Not recorded*		
Output 2.1 **ADI doctor or health educator provides case-based or group training to rural HCWs while on patrol**	**P-H**: **60 hours** case-based or group training delivered by doctor or health educator per annum 2017 = **66.2 hrs** 2018 = **198 hrs**	Clinical training forms	Rural healthcare workers are present at their health centres on day of patrol visit
Output 2.2 **ADI staff and/or health training partners deliver in-service training to rural HCWs**	**IST-HCW**: 25% of HCWs complete in-service training per annum (and cumulative coverage is 100%) ***Not relevant for Western Province***	In-service training records	
	IST-D: 200 HCW in-service training days per annum ***Not relevant for Western Province***	In-service training records	HCW In-service training days = # of HCWs trained x # of training days
	IST-HCWI: 75% of HCW report an improvement in confidence and clinical ability at least 6 months after in-service training ***Not relevant for Western Province***	Post-training follow-up survey	
	IST-HCWW: Target: At least 50% of HCWs attending in-service are women ***Not relevant for Western Province***	In-service training records	Supports our Gender Equity policy
Outcome 3 **PNG health partners play an active role in planning and implementing health programs, with an increasing capacity**	**C-PPF**: **75%** of program positions filled by PNG health partner staff across ADI programs in both administrative and clinical roles	Program documentation	ADI looks for evidence to demonstrate increasing commitment of partners (public display of political support, financial support, in-kind

	2017: 37/48 = **77%** 2018: 93/129 = **72%**		contributions)
	C-EPI: Health partners demonstrate increased engagement in program implementation *Not recorded*	Partner evaluations	
Output 3.1 **Bi-annual reporting and discussion with PNG health partners covering joint program operations, capacity, risk, practices and policies**	**C-CF**: Constructive feedback received leading to program improvements and increased capacity of PNG health partners *Not recorded*	Meeting notes/agreed outcomes (following presentation and discussion of reports)	Health partners are receptive
	C-OS: Evidence where opportunity and/or supervision by ADI has increased partner's capacity (qualitative answers to be provided) *Not recorded*	Use individuals as examples	