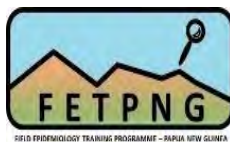


Papua New Guinea ONE HEALTH FRONTLINE Field Epidemiology Training Program

Summary Report October 2023



Executive summary

In September 2022, the National Department of Health (NDoH) received a grant from The Global Fund COVID-19 Response Mechanism (C19RM) funding to establish and pilot a 3-month in-service field epidemiology training program. During initial stakeholder consultations, FETPNG adopted a One Health approach in the development and delivery of this training program, recognizing the urgency of developing a multisectoral frontline workforce capable of addressing health threats.

The primary focus of the frontline field epidemiology training program of Papua New Guinea (f-FETPNG) is to equip frontline workers across sectors with the necessary knowledge and skills to prevent, predict, detect, and respond to public health threats. Additionally, the f-FETPNG program aims to foster stronger communication with communities and partnerships across sectors in provinces where it is implemented.

During 2023, f-FETPNG was piloted in four provinces: West New Britain, West Sepik, Morobe and National Capital District. Focusing on surveillance, outbreak investigation and community engagement. In total, 61 fellows from human, animal and environmental sectors graduated, with each undertaking a surveillance data review and a field investigation to fulfil program requirements. Sustainability is a core pillar of the program, with faculty supported through training in adult learning techniques and facilitator preparation sessions prior to each workshop. Continuous quality improvement incorporated into all aspects of the program, with an impact evaluation currently underway.

The program aligns with the Papua New Guinea Vision 2050¹, addressing two of the seven pillars in Human Capital Development, and Institutional development and Service Delivery. Furthermore, the f-FETPNG aligns with the Key Result Areas (KRAs) of the New National Health Plan 2021-2030². These KRAs include healthy communities through effective engagement, working together in partnership, increasing access to quality and affordable health services, addressing disease burden, and targeting priorities and strengthening health systems.

Following significant success in 2023, plans for additional f-FETPNG cohorts in 2024 are underway, emphasising its continued growth and impact.

¹ National Strategic Plan Taskforce. Papua New Guinea Vision 2050. Accessed from, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.treasury.gov.pg/html/publications/files/pub_files/2011/2011.png.vision.2050.pdf

² National Department of Health. 2021. New National Health Plan 2021-2030: Building the health of our people, leaving no-one behind is everyones business. Accessed from, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.health.gov.pg/pdf/NHP_1A15.pdf

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For information related to this report please contact: Mr Barry Ropa, Director for FETPNG or Ms Kelitha Malio, f-FETPNG program coordinator, kelitha_malio@wvi.org.

Introduction

The frontline Field Epidemiology training program of Papua New Guinea (f-FETPNG) commenced in September 2022, following a grant from The Global Fund COVID-19 Response Mechanism (C19RM). f-FETPNG is one of four pivotal training programs within the broader Field Epidemiology Training Program of Papua New Guinea (FETPNG). FETPNG is led by the National Department of Health (NDOH), in collaboration with the University of Newcastle and the World Health Organization (WHO) and other partners.

In 2013, the FETPNG was established, featuring 9-month intermediate field epidemiology training program (iFETPNG) designed to tackle a significant national shortage of field epidemiologists in PNG. Typical of field epidemiology training programs globally, program trainees or fellows spend most of the program completing field activities in their workplace supported by mentorship and intensive workshops. The initial focus was on operational research and public health interventions to equip the public health workforce with the skills to address national public health challenges.

Over the past 5 years, FETPNG has broadened its scope to encompass surveillance and outbreak detection and response targeting additional areas of the workforce. The expansion includes the introduction of an advanced program (aFETPNG), Rapid Response Team training (RRT) as well as the frontline program (f-FETPNG). The current vision of FETPNG is to contribute to a healthy, productive, and prosperous Papua New Guinea, and the mission is to train a cadre of cross-sectoral skilled health professionals who provide in-service assistance to advance and protect health and contribute to evidence-based decision-making.

One of the drivers for expanding FETPNG was the COVID-19 pandemic, which highlighted the need for a surge workforce equipped with the knowledge and capability to prevent, detect, and respond to health emergencies, and the need for a common language across sectors to facilitate coordination. This was particularly important for workers at the frontline, who are often the first to hear of and respond to health threats affecting communities.

In terms of epidemiology capacity building, the need to train frontline workers globally has resulted in the adoption of frontline programs, the first tier of the cascaded field epidemiology training model that includes a 9-month program as intermediate training, and 24-month program as advanced training. These intensive 3-month in-service training programs aim to build expertise in disease surveillance, outbreak investigation, and data analysis, interpretation, and communication to promote evidence-based decision making.

Uniquely in the context of global urbanization, less than 14% of PNG live in urban centres. The importance of training frontline workers is therefore even more significant. Frontline workers are the bridge between community and the various sectors, they are often the first to hear of health threats affecting communities and need to be skilled in prevention, detection, and response to health threats. With the complex accessibility issues facing many of PNGs remote communities it is the frontline workers that are most likely to reach communities in the timeliest manner after an alert is verified. In addition, training of cross-sectoral teams provides opportunity for relationship building, sensitisation to roles and responsibilities of the various sectors and enhances the capacity for information sharing and coordinated joint responses at the frontline.

Program design

In September 2022, stakeholder consultations commenced to establish and pilot a 3-month in-service field epidemiology training program for frontline workers. During initial discussions, FETPNG team decided to adopt a One Health approach in the development and delivery of this training program due factors listed above

including the increasingly complex and often multi-sector health threats, limited capacity at the frontline, and the need for a common language across sectors to facilitate coordination and response.

The inception period involved national stakeholder meetings and high level program design including: criteria for selection of pilot sites, provincial needs assessments, iterative curriculum development, development of clear participant selection criteria and robust quality assurance measures.

Initial selection of pilot sites was determined by 1) the presence of FETPNG graduates who could serve as trainers/mentors, 2) demonstrable strong leadership at the Provincial Health Authority, and 3) prioritisation by National Agriculture Quarantine and Inspection Authority (NAQIA).

Preliminary site visits were conducted in identified provinces followed by readiness assessments to verify the capacity and interest of the province in supporting a program. During the readiness assessment, provincial leadership from One Health sectors were brought together and discussions were had on cross-sectoral relationships, collaboration and information sharing. The readiness assessment also established the need for and interest in cross-sectoral training.

The training curricula was initially adapted from the United States Centres for Disease Control and Prevention (CDC) FETP-frontline curriculum, frontline in-service applied veterinary epidemiology training program (ISAVET) and iFETPNG. The training was designed to complement and serve as a foundation for iFETPNG but focusing on competencies related to principles of surveillance and data analysis, outbreak/field investigation, and community engagement (refer to Table 1). Through partnering with provincial authorities and other stakeholders from multiple sectors, the program extends surveillance and outbreak response skills to the community. This strategic approach aligns with Key Result Areas (KRAs) of the New National Health Plan 2021-2030³. These KRAs include healthy communities through effective engagement, working together in partnership, increasing access to quality and affordable health services, addressing disease burden, and targeting priorities and strengthening health systems.

Table 1: One Health f-FETPNG competency domains and learning outcomes, 2023

Competency Domain	Competencies required to graduate	Learning outcomes
Epidemiological concepts	Describe key disease prevention and control concepts	Explain the principle of One Health Define field epidemiology Apply key principles in communicable disease control
Epidemiological surveillance	Map a surveillance system for a human, animal, ecosystem, environmental health issue Summarise, analyse, and interpret human, animal and ecosystem surveillance data	Describe the purpose of epidemiological surveillance Differentiate between types of epidemiological surveillance Construct a flow diagram of a surveillance system Apply a surveillance case definition and create a line list Identify data quality issues Interpret surveillance data to identify unusual events, outliers, and trends Discuss the limitations of surveillance data Write a surveillance report or a descriptive data review

³ National Department of Health. 2021. New National Health Plan 2021-2030: Building the health of our people, leaving no-one behind is everyones business. Accessed from, [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.health.gov.pg/pdf/NHP_1A15.pdf](https://www.health.gov.pg/pdf/NHP_1A15.pdf)

Outbreak or field investigations	Investigate a public/animal/plant/environmental health alert	Fellows can identify and verify suspect outbreak or health events Fellows can identify roles and responsibilities of outbreak team Fellow can apply an outbreak case definition Fellows can create and maintain a line list Fellows can conduct a descriptive analysis of a line list Fellows can complete a case investigation form (questionnaire) for a field investigation Fellows can conduct interviews with cases during an investigation Fellows can make recommendations about appropriate control measures Fellows can apply appropriate biosafety, biosecurity and infection, prevention and control (IPC) measures
Data management and analysis	Create and manage epidemiological data Conduct a descriptive data analysis in terms of time, place, and person/animal/plant	Fellows can conduct a descriptive analysis Fellows can display data in tables Fellows can display data in graphs Fellows can interpret results
Evidence based practice	Provide recommendations from field projects	Fellows can develop recommendations based on their findings Fellows can identify the governance for taking health action
Communication and community engagement	Create a communication plan for sharing surveillance data and for use during an outbreak investigation Demonstrate capability in successfully partnering with communities	Fellows can conduct community engagement with local communities Fellows can create a communication plan Fellows can identify and apply a range of communication strategies to suit the target audience Fellows can conduct risk communication Fellows describe the importance of cross-sectoral relationships Fellows can identify misinformation

Selection criteria specified that 1) each sector was responsible for selection of their participants; 2) nominees must be employed within the sector and in an applied role where they could utilise skills in data analysis, surveillance, field-investigation, and community engagement; 3) nominees had support to complete their field projects during their work time; and 4) nominees would be released for face-to-face workshops. A cap of 20 fellows per cohort was maintained based on trainer and mentorship capacity.

An iterative co-creation approach enabled the curricula to be shaped by participants and faculty from all sectors throughout the piloting process, ensuring its relevance and effectiveness in addressing the real-world challenges faced by frontline workers across sectors in the country.

The f-FETPNG emphasises the importance of a coordinated and interdisciplinary approach to address the evolving health challenges faced by the country. By equipping frontline workers with the foundational skills and knowledge, the f-FETPNG program aims to strengthen PNG's capacity to prevent, predict, detect, and control health threats, produce evidence to enhance decision making, improve communication with communities, while also fostering collaboration and partnerships across sectors.

With the aim of ensuring sustainability of the f-FETPNG, the program is embedded within provincial government authorities and provincial and district level field epidemiologists (graduates of iFETPNG and aFETPNG) lead the frontline program. A Frontline Program Coordinator was employed at the national level, logistics for program

implementation is supported by World Vision and technical support provided by the Field Epidemiology in Action team at the University of Newcastle. The Frontline program coordinator work closely with the FETPNG program Director to ensure the frontline program is institutionalised within the NdoH and PHA structures, supported by key stakeholders.

Program implementation

The f-FETPNG was piloted in four provinces: West New Britain (WNB), West Sepik (WSP), Morobe and National Capital District (NCD). Each 12-week cohort involved nine-weeks of mentored field activities supplemented by three intensive workshops (Figure 1). The first phase on the program focused on surveillance with the second phase focusing on field investigations. During the two field intervals fellows worked on their field projects and engaged with Village Health Volunteers, district facilitators and cluster leaders to build relationships and communication pathways with communities.



Figure 1: Overview of the f-FETPNG.

To support fellows in the field, fellows were strategically matched with PNG-based mentors at the start of the program, aligning their expertise and sectors for a more tailored and effective mentorship experience for the program duration. Each mentor supported two to five fellows during each cohort. Where possible, on-site mentorship was provided to build rapport and ensure issues were rapidly addressed. For fellows located at towns without faculty, remote mentoring was provided by through WhatsApp, SMS and telephone calls. In some instances, WhatsApp groups were also formed with fellows working on similar projects with the same mentor. International faculty supported PNG mentors and provided additional expertise for fellows as required.

Prior to each workshop, a five-day facilitator preparation session was held to provide junior and senior faculty with the time to prepare and practice for the delivery to fellows. During the five days, participants reviewed feedback captured in evaluations of prior workshops and familiarised themselves with and the teaching materials and content. Cross-sectorial facilitation teams were critical to ensuring the content delivered included epidemiological methods and examples used by different sectors in PNG. The facilitator session also provided time for junior faculty to practice and enhance their facilitation skills using Kolb's learning cycle, contributing to the building of capacity, and enhancing the sustainability of the program. As trainers became increasingly confident with the content and delivery, these pre-workshop sessions also incorporated professional development in mentoring and technical skill enhancement.

In addition to pre-workshop facilitator sessions, a training of trainers' workshop was organised for a core group of trainers and mentors (see Table 2) from the four pilot sites, were brought together with national trainers from the National Department of Health (NDoH), NAQIA, Department of Agriculture and Livestock (DAL), international partners, and other local stakeholders. During this training, faculty were introduced to a variety of interactive experiential learning techniques, including facilitation techniques, training activities and approaches, improving the ability to adapt training, and increasing confidence and skills in delivering effective training. Eighteen faculty members from PNG, representing the human health, animal health, and environmental health sectors, participated in the training.

Table 2: Frontline FETPNG faculty and trainers, 2023

Name	Substantive role	f-FETPNG role	Location
Kelitha Malio	Frontline Program Coordinator	Faculty/Mentor	NCD
Miriel Boas	Frontline Program Assistant	Faculty	NCD
Alois Pukenei	Deputy Secretary, Public and Clinical Health Services Coordination.	Senior Faculty/Mentor	Autonomous Region of Bougainville
Bethsheba Peni	Provincial Disease Control Officer	Senior faculty/Mentor	WNB
Richard Bulo	Health Extension Officer/ OIC	Faculty/Mentor	WNB
Simon Mendep	Environmental Health Officer-f-FETPNG graduate	Faculty	WNB
Maree Menik	Environmental Health Officer-f-FETPNG graduate	Faculty	WNB
Dr Mary Kaevakore	Medical Officer	Senior Faculty/Mentor	NCD
Rosemary Bates	Surveillance Officer/HEO	Senior Faculty/Mentor	NCD
Catherine Gandi	Disaster Emergency Program Officer/HEO	Faculty	NCD
Elaine Hevoho	Technical Officer-Immunoassay	Faculty/Mentor	NCD
Elaine Kagen	Animal Health Officer	Faculty/Mentor	NCD
Edwin Benny	Provincial Disease Control Officer/Health Extension Officer (HEO)	Faculty/Mentor	Morobe
Gershom Guambelek	Health Extension Officer/ OIC	Faculty/Mentor	Morobe
Brian Manari	Health Extension Officer	Faculty/Mentor	Morobe
John Landime	Health Extension Officer/ OIC	Faculty/Mentor	Morobe
Stewart Pau	Health Extension Officer	Faculty/Mentor	Morobe
Josephine Inguba	Animal Health Officer	Faculty/Mentor	Morobe
Raphael Anea	HEO/Acting Provincial Disease Control Officer	Faculty/Mentor	WSP
Danny Airem	Environmental Health Officer	Faculty	WSP
Fernando Yala	Rural Development Officer	Faculty	WSP
Laura Macfarlane-Berry	Veterinarian Epidemiologist	International Faculty/Mentor	Australia
Tambri Housen	Epidemiologist	International Faculty/Mentor	Australia
Maria Trinidad Velasco	Public Health Veterinarian	International Faculty/Mentor	Australia

The four pilot programs have successfully graduated over 60 One Health frontline field epidemiologists, demonstrating their proficiency in all training competencies. Fellows have concentrated on foundational field epidemiology practices, integrating the One Health approach into surveillance, outbreak investigations, data management, analysis, and field projects. They provide representation across various sectors (Table 3), building strong relationships and thereby establishing a One Health community at the national and provincial level.

Table 3. Summary table of graduates by province and sector.

Province	Human Health	Environmental Health/Safety/Quarantine	Plant Health	Animal Health	Other (Business/Welfare)	Total No of graduates
West New Britain	5	4	0	2	0	11
West Sepik	9	1	2	4	0	16
Morobe	6	5	1	4	0	16
National Capital District	8	7	1	1	1	18
Total	28	17	4	11	1	61

External engagement

External engagements related to f-FETPNG have been instrumental in building relationships with partners across the Indo-Pacific to advance field epidemiology capability using a One Health approach. In April 2023, we had the privilege of presenting our innovative approaches, insights, and lessons learnt at the Asia Pacific Consortium of Veterinary Epidemiology (APCOVE) meeting in Thailand, shedding light on the crucial work carried out by f-FETPNG trainees and graduates. Our engagement with the Pacific Community (SPC) in Samoa and Fiji in August 2023 allowed us to share the process of developing f-FETPNG, key outcomes and lessons learnt. In September 2023, we partnered with the United Nations Food and Agriculture Authority (FAO) during the South Asia Field Epidemiology and Technology Networks (SAFETYNET) regional conference in Canberra for discussions centred on establishing a One Health community of practice. These collaborations underscore the f-FETPNG teams' commitment to capacity building, knowledge exchange, and the development of best practices, all aimed at strengthening health systems and safeguarding the well-being of communities in PNG and across the Indo-Pacific.

These external engagements have led to further discussions with SPC on the potential of the f-FETPNG team working with other Pacific Island Countries and Territories to adapt the PNG program for other countries. The CDC and Ministry of Health in India have engaged with the team on sharing curriculum and lessons learned as they prepare to roll out their first One Health FETP, and SAFETYNET has also engaged the f-FETPNG team to learn about our experiences as they support Malaysia to develop and implement their first One Health FETP. FAO regional office has been in discussions with the team on further professional development for f-FETPNG graduates through regional training using a One Health scenario.

A manuscript on the development of the f-FETPNG program and lessons learnt has been submitted for publication to the Western Pacific Surveillance and Response journal (WPSAR) and is under review.

Continuous quality improvement and evaluations

Continuous quality improvement and evaluations are a crucial aspect of f-FETPNG implementation, providing insights into program effectiveness and identifying changes to improve quality, efficiency and performance. They are achieved through daily participant feedback during workshops, peer feedback for workshop facilitators, workshop evaluations, reviews of workshop materials following the conclusion of each cohort, and a program evaluation following delivery of four cohorts.

Workshop evaluations have been conducted for half to one day following conclusion of each workshop. During these evaluations, faculty members engage in reflective discussions of successes, challenges, areas requiring improvement, and practices worth retaining. Four key areas were focused on: session development, teaching, learning, and mentoring. Findings from each evaluation were used to improve delivery of subsequent workshops and training materials.

Following the conclusion of four cohorts, an impact evaluation was initiated and is currently underway. Preliminary findings indicate that graduates have improved their proficiency in key areas, including data collection, data analysis, and their utilisation of surveillance reporting and data collection tools. Multiple sectors participating in the Frontline Field Epidemiology Training Program (f-FETP) have reported actively leveraging f-FETPNG graduates to enhance disease detection and surveillance within their workplaces.

Provincial Health focal points have reported promotions among program graduates. In WNB, Grace Bid has been promoted to Acting Provincial Malaria Officer, Bernard Titang now serves as the Officer-in-Charge (OIC) at Baea Community Health Post (CHP) and recently, the Provincial Health Authority (PHA) has provided support to Bernard for pursuing General Nursing training. Additionally, Dulson Piwen has assumed the role of District Health Officer in Vanimo, West Sepik Province. Having successfully completed the training, four fellows subsequently joined as junior faculty members and facilitated workshops in other provinces.

The preliminary findings have also identified constraints and areas for improvement. First, there is a shortage of provincial f-FETPNG facilitators/mentors, impacting the program's ability to meet country demand. Thus, it is important to continue to select and train graduates to become junior faculty. In addition, logistical challenges, such as late accommodation bookings, flight cancellations, and delayed per diem payments, have been reported, adversely affecting the overall efficiency of the program. To mitigate these issues, early submission of each workshop activity plan to funding management for procurement is recommended to ensure smooth coordination of workshops throughout the training.

Reflecting on successes, it is evident that specific selection criteria are crucial to preventing dropouts and recruiting suitable trainees. Onsite mentoring, where possible, has proven effective, as have innovations aimed at strengthening community engagement. Sourcing mentors from diverse sectors, promoting multi-sector projects, and emphasising cross-sectoral training have been identified as strategies that not only work during the training phase but also build relationships with translational impact post-training.

Legacy

As a direct result of the f-FETPNG program an informal One Health Network has been created in each pilot province. They utilise various communication channels including WhatsApp, email, and phone calls, for effective collaboration (see box 1) .

Box 1: Examples of f-FETPNG graduate communications on WhatsApp province specific group chats.

- Alert on dead whale event (frontliners joint investigation).
- Alert on sale of contaminated fish.
- Advice sought on dog with unknown growth on eyes.
- Alerts and investigations on deaths due to diarrhoea.
- Alert on food-borne illness from food sold at local market.
- Policy documents shared.
- Advice for a broken sewage pipe.
- Response conducted for an earthquake and associated environmental and health impacts.
- Alerts to suspected outbreaks of skin disease.
- Alerts on suspected cases of vaccine preventable diseases.
- Alert on fish with abscesses.
- Follow up on results from laboratory samples.
- Outbreak reports shared.

Graduates

A total of seventy-six fellows have been enrolled in the f-FETPNG program, 31 females and 46 males. However, fourteen fellows dropped out due to work and health-related issues. The remaining 61 fellows successfully fulfilled all graduation requirements, Tables 4-7.

Table 4: West New Britain frontline FETPNG graduates, 2023

Fellows Name	Position	Surveillance Project	Outbreak/Field Investigation Project
1. Cynthia Godfrey	Health Extension Officer	Malaria Surveillance at Bola Health Centre October 2022	An assessment of knowledge on Malaria disease in Bola village, Talasea district, West New Britain Province, January 2023.
2. Bernard Titang	Community Health Worker	Indicator Based Pneumonia Surveillance of under 5 years old at Baea Community Health Post from January to December, 2021	An outbreak of dysentery among logging workers in Toki Logging camp, Nakanai district, West New Britain Province, 17-21 March 2022.
3. Leonie Paraka	Nursing Officer	Factors attributing to increased referrals of trauma cases to Kimbe Provincial Hospital, West New Britain Province, Papua New Guinea, January 2023.	Factors attributing to increased referrals of trauma cases to Kimbe Provincial Hospital, West New Britain Province, Papua New Guinea, January 2023.
4. Maree Menik	Environmental Health Officer	A Surveillance Report on Malaria Cases, Tamba LSS ward 7 located in Mosa LLG Nakanai District in WNB from July to October, 2022.	Field Investigation of Diarrheal cases amongst the displaced victims of Mt Ulavun Eruption, West New Britain Province, July 2019.

5. Grace Bid	Environmental Health Officer	An Assessment of Waste Management Complaints in Talasea District, WNB from January 2018 to December 2021	Field Investigation of Diarrheal cases amongst the displaced victims of Mt Ulavun Eruption, West New Britain Province, July 2019.
6. Simon Mendep	Environmental Health Officer	An indicator-based surveillance report of diarrheal diseases in children less than 10 years old presented at Navo clinic from January- October 2022.	Investigation on environmental exposures of diarrhoeal cases presented at Navo Clinic from January-October 2022.
7. John Melo	District Livestock Officer	Type of Stock and Management In Kandrian Gloucester district as at 24 th -28 th October 2022.	Beef Cattle Diarrhea Investigation at Numondo Cattle Farm as of 06 th to 20 th January 2023
8. Enock Nukvue	Provincial Livestock Officer	General Surveillance of livestock rearing in seven high risk spots of Talasea district, WNB as of June, 2021.	Field investigation on Diarrhea in Pigs in Talasea District in December 2022.
9. Josephine Bogu	Health Promotion Manager	An indicator-based surveillance report on HIV/AIDS cases attending Leguava clinic- Kimbe Provincial Hospital from 2020-2021.	Assessing the standard oh healthy living practices in Kwalakessi village un WNB from November 28 th - 4 th December 2022.
10. Julius Lakamo	Laboratory Officer	Malaria Positive cases detected by Blood smear Giemsa-stain Microscopy at Kimbe Provincial Hospital Laboratory from July to October 2022.	Identifying locations of probable increase of Malaria cases through the Laboratory Register at the Kimbe Provincial Hospital Laboratory, November to December 2022.
11. Miriel Boas	Frontline Project Assistant	Prevalence of general infectious skin diseases in Kimbe Provincial Hospital and Kandrian Health Centre, from January to June 2022.	Malaria Outbreak among pregnant women in Valoka Village, Hoskins District, in December 2022.

Table 5: West Sepik frontline FETPNG graduates, 2023

Fellows Name	Position	Surveillance Project	Field Investigation Project
1. Philip Mamtirin	Aid Post Supervisor	Assessment of Supervised Delivery of New-born at Sibilanga Health Sub-Centre, January- December 2022.	Investigating the Factors contributing to unsupervised delivery at Sibilanga Health Sub Centre, March 2023.
2. Fernando Yala	Rural Development Officer	Assessing the damage of Cocoa Pod Borer (CPB) on Cocoa Beans in Brugap Village from 2021 to 2022.	Field investigation of the implementation of Integrated Pest and Disease Management practices against Cocoa Pod Borer in Brugap Village, February 20 to march 5, 2023.
3. Michael Yakawu	Rural Health Technician	Indicator based surveillance report on TB sputum Microscopy at Nuku Health centre 2021.	Field Investigation report on Presumptive TB cases at Nuku Health Centre catchment area, January-December 2021
4. Elaine Augawi	District Fisheries Officer	Status and Development Trend in Fish Farming in Namblo Village, Nuku District, 2021- 2023.	Field Investigation on Possible causes of the Stunted Growth in Tilapia Fish in Dug-out Ponds in Namblo Village, Nuku District, West Sepik Province, March, 2023.
5. Jimmy Ripai	Aid Post Supervisor	A surveillance report on Sexually Transmitted Infection testing, Green River Health Center, January-December 2022.	Field Investigation on Yaws, Green River LLG, January – March 2023.
6. Bernard Korei	Community Health Worker	Positive Malaria cases at Amanab Health Centre in West Sepik Province from September to November, 2022	Field Investigation into tropical ulcers among students of Amanab Primary School in Amanab Local Level Government on 24 th March 2023.
7. Dennis Wairon	Community Health Worker	Assessment of Leprosy burden at Imonda Health Centre, West Sepik Province, January to December, 2022	Assessing incidence of Leprosy cases at Imonda Health Centre catchment through contact tracing, March 2023.
8. Ekson Tegerok	Medical Laboratory Assistant	Indicator based surveillance report on TB sputum Microscopy at Bewani Health centre 2022.	Field Investigation report on Presumptive Pulmonary TB cases at Bewani Health Centre catchment area from 1 st January to 31 st December 2022.

9. Eugene Yeku	Aid Post Supervisor	Assessment of Malaria Burden in Vanimo (Dapu) Urban Clinic for the month of June to December 2022.	An assessment of malaria knowledge and practices among adults in ward 7 of Dapu Urban Clinic catchment area, March 2023.
10. Sylvester Laho	Community Health Worker	Surveillance report of TB Treatment outcome at Imonda Health Center from 2021 - 2022	Field Investigation Report on clusters of Yaws cases at Umda village, Imonda Health Centre, January 2023.
11. Larisha Sakin	Agriculture Quarantine Officer	Monitoring of Agricultural products through the Wutung Land Border, October 2022 to January 2023.	Investigation on possible reasons why goods are detained for Quarantine at Wutung Border Post, March 2023.
12. Loretta Imba	District Trees & Food Crops Officer	Assessment of Export crops & Fruit trees damage in Bewani Wutung Onei LLG from November 2022 – January 14 th 2023	Export Crops Affected by Land Development in Wisipi Backroad, Vanimo Urban LLG, March 2023
13. Karan Suwi	Officer In Charge	Black Pod Disease Affecting Cocoa Production in 10 Villages of Green River Local Level Government from 2021-2022.	Investigating Presence of Black Pod Disease in Dio Village, January 2022 – 2023.
14. Ellanor Miroi	District Fisheries Officer	Fish Farmers enquiries in the Vanimo Green district, 2020-2022.	Fish mortality in Yako village, September, 2022.
15. Danny Airem	Frontline Project Officer	Diarrheal cases for the catchment population in Dapu Health Center in Vanimo Urban Local Level Government from July to September, 2022.	General assessment of environmental conditions in adults in Wards 5 and 7 in Vanimo Urban between 14 th to 18 th March, 2023.
16. Julian Oklau	Community Health Worker	Assessment of Accidents and injuries Admissions to Murkily Health Sub Center, January to December 2022.	Field investigation of tropical ulcer in humans, Aindrin village, Malol, April 2003.

Table 6: Morobe frontline FETPNG graduates, 2023

Fellows Name	Position	Surveillance Project	Field Investigation Project
1. Adrian Kakayan	Nursing Officer	Reporting on TB Treatment Outcomes for Malahang Health Centre from January to March (QTR 1), 2021.	Outbreak investigation report of mysterious deaths of villagers at Nemnem village in Wau Rural LLG of Wau/Waria District, from March 2023 and up.
2. Kevin Bimbim	Environmental Health Officer	Food Complaint Investigation, Lae Urban Local Level Government, Lae City from June 2022 to May 2023.	Food Premises Investigation at Lae Urban LLG, Morobe Province, July 2023.
3. Jeffery Mumbiangke	Livestock Officer	Cocoa Black Pod disease in four council ward areas of Kotte LLG, Finschafen district, Morobe Province from January to December 2022.	Field Investigation of Migratory Locusts on six sites of Nawaeb and Huon Gulf Districts, Morobe Province, July 2023.
4. Davike Masange	Livestock Officer	Impacts on Cocoa Production in Ward 9, Labuta LLG, Nawaeb District from 2020 to 2022.	Investigating the effect of taro beetle on taro in Musom Tale, Gobari and Situm in Labuta LLG, Nawaeb district from 12 to 18 th July 2023.
5. Janeth Margreth Lama	PNGDF Medical Doctor	The Outcome of Malaria Survey Conducted from April – May 2023 at PNGDF Igam Military Barracks, Lae, Morobe Province, PNG.	Review of Diarrhea Outbreak in Momolili village, Bukawa in the Nawaeb District, Morobe Province, PNG in November 2021
6. Eunice Pusahai	Laboratory Scientist	Positive cases for Covid-19 in Angau, Morobe Province, 2022.	Field Investigation on Positive Malaria Cases in Angau, 1 st -25 th July 2023.
7. Brendon Benjamin	Data Surveillance Officer	Assessing Weekly Syndromic Surveillance Report of five Health Facilities in Lae District for Week 1-12 of 2023.	Pertussis Outbreak at Kira LLG, Border of Morobe and Oro Province in December 2022.
8. Sapon Suman	Animal Health Officer	Containment of ASF through controlling movement of live pigs and pork meat in the month of March, April and May at Kenangi Checkpoint at Daulo District of Eastern Highlands Province.	Disease Investigation on Pig Deaths at Idam, Vanimi-Green District, West Sepik Province on 26/05/2023 to 2/06/2022.

9. Manape Kum	Animal Health Inspector	Slaughtering Pregnant Cattle at Gusap Abattoir, Ramu Beef, January to December, 2017.	Investigation of Suspect African Swine Fever (ASF) in Pigs at Walium and the surrounding villages, Madang, Papua New Guinea, March, 2023.
10. Lama Gorgom	Customs Officer	Assessing Inspection Activity for the month of May 2023, Lae, PNG Customs.	Influenza Like Illness (ILI) outbreak in Besibong village, Pindiu LLG, Finchaffin District in the month of June 2023.
11. Emma Kitang	Environment & Conservation Officer	Decline of Leatherback Turtle Nesting in Lababia Village (Kamiali Wildlife Management Area) along the Huon Gulf Coast, Morobe Province in December, 2022.	Waterborne Disease cause by Untreated Drinking Water amongst the Residents of Main Market Area, Lae, Morobe Province, January-April 2023.
12. Cecelia Amol	Nursing Officer	Positive Malaria Attendance at Centre of Mercy Health Centre Clinic, Kamkumung, Lae, Morobe Province in the first Quarter which is from January-March 2023.	Pertussis (Whooping cough) Outbreak Investigation infecting Children of less than 12 years of age from Onga village inclusive of the (3) three hamlets in Onga/Waffa LLG, Markham district 2 on 25 th August – 3 rd September 2021.
13. Domben Gandeng	AIHSS Officer	Surveillance Summary Report on Immunization Data Review for Hem aid post, Kabwum District of Morobe Province, January 2019 to December 2022.	Pertussis Outbreak Investigation Report from Garaina valley, Wau/Waria District Morobe Province – February to June 2021.
14. Abraham Simbuna	PNG Ports Officer	Environmental Oil Spill Surveillance and Containment at PNG Ports, Lae from 2018 to 2023.	Maritime Oil Spill, Surveillance and Containment.
15. Ulaiah Tongon	Plant Health Officer	Coffee Berry Borer (<i>Hypothenemus hampei</i>) cases in Eastern Highlands Province, April 2020.	Field Investigation report on suspected Fall armyworm (<i>Spodoptera frugiperda</i>) species in Sandaun, West Sepik Province- Papua New Guinea, 17 th -23 rd November, 2020
16. Geraldine Yanopa Marong	Environmental Health Officer	Household Municipal Waste Management in Wards 1, 2, 3 and 8 of Bulolo Urban LLG, Bulolo District in Morobe Province in 2022.	Household Waste Management and Malaria cases in Ward 2, Bulolo Urban LLG, Bulolo District from 1 st – 30 th June 2023.

Table 7: National Capital District frontline FETPNG graduates, 2023

Fellows Name	Position	Surveillance Project	Field Investigation Project
1. Blacklock Sine	Health, Safety and Security (HSS) Officer	Surveillance report of Water PNG Occupational Health Cases from January-June 2023 across Ten Business Centers (Pom, Kokopo, Kimbe, Alotau, Mt. Hagen, Lae, Popondetta, Madang, Wewak and Wabag).	Field investigation of Tuberculosis Cases at Water PNG; Port Moresby and Lae Branches During the Month of May to August 2023.
2. Fena Stanley	Microbiologist	Review of Drinking Water Quality, as Supplied by Mt. Eriama Treatment Plant and throughout its reticulated Networks in Port Moresby from June 2022- June 2023.	Investigation of Midge Fly Infestation of Drinking Water at Hanuabada-Elevala villages, Port Moresby, Papua New Guinea from 2 nd to 31 st August 2021.
3. Rachel Toniu	Nursing Officer	Presumptive PTB situation in Gerehu Hospital from the 1 st to 30 th April, 2023.	Investigating Laboratory Confirmed Pulmonary Tuberculosis cases in Gerehu catchment from 1 st January -31 st March, 2022 in Gerehu Hospital.
4. Serah Gaiyowa	Nursing Officer	Identification and Review of Fever Cases among the age group of zero (0) to six (6) weeks of age (neonates) from Children's outpatient Triage at Gerehu Hospital from January-March 2023.	Investigating Laboratory Confirmed Pulmonary Tuberculosis cases in Gerehu catchment from 1 st January -31 st March, 2022 in Gerehu Hospital.

5. Elizabeth Agapi	Nursing Officer	Category 1 cases presenting at Emergency Department, Gerehu Hospital from January-March 2023.	Investigating Laboratory Confirmed Pulmonary Tuberculosis cases in Gerehu catchment from 1 st January -31 st March, 2022 in Gerehu Hospital.
6. Clifford Wilford	Nursing Officer	Yaws cases in the age group of 0-15 years old children from the month of March to May 2023 at Badili Urban Clinic.	Field investigation of Yaws cases in the age group of 0-15 year's old children within the Badili Urban clinic's catchment zone from 9 th - 13 th July, 2023.
7. Mary Sungu	Nursing Officer	Indicator based Surveillance report on malnutrition in children aged 0-59 months in Hanuabada village, National Capital District from January to March, 2022.	Field Investigation On Low Results on Exclusive Breast Feeding during the first six months from Hanuabada Village, August 2023.
8. Roy Mathew	Nursing Officer	A surveillance review of malaria positive cases in Brown River, 1 st Jan – 31 st April, 2023.	Field investigation of scabies in children ages 0 -15 years, Erima Settlement, July 2023.
9. Dr Veronica Niltainde	Medical Officer	Review of Diabetes Cases at 6 Mile Clinic from April to September 2022.	Field Investigation of Contacts of a Drug Resistant Tuberculosis (DRTB) Sputum Positive Case, Gereka, 15 th August 2023.
10. Dr Louisa Kidu	Medical Officer	Review of Diabetic Cases at Lawes Road Clinic in January to June 2022.	Field Investigation of Leprosy cases in Vabukori village, April to June 2023.
11. Figo Rofore	Medical Lab Scientist	Biological Oxygen Demand Levels at Joyce Bay Sewage Treatment Plant (JBSTP), Moresby South District from January to December, 2021.	Biological Oxygen Demand Levels at Joyce Bay Sewage Treatment Plant (JBSTP), Moresby South District from January to December, 2021.
12. Valentina Yamanea	Animal Health Officer	Monitoring and distribution of the Total Volume of Veterinary Biologicals and Veterinary Pharmaceuticals Imports into Papua New Guinea (PNG) from Jan – Dec 2022.	Outbreak Disease Investigation of African Swine Fever (ASF) into Buffer Areas of Simbu and Eastern Highlands Province (EHP), July 2022.
13. Steven Tomaki	Plant Health Officer	Surveillance and monitoring of Coconut Rhinoceros Beetle (CRB) biotype composition in NCD & Central Province, from Jan-May 2021	Fall Armyworm outbreak investigation in the treaty villages, Western Province in February, 2020.
14. Eunice Tovili	Environmental Health Officer	An analysis of Food Safety Complains in Kimbe Town from January to October 2022.	An investigation of diarrhoea outbreak in Silanga Village, West New Britain Province, August 2023.
15. Zita Kawang	Health Promotion Officer	A surveillance review of IEC materials distributed in the National Capital District (NCD), January to May 2023.	Field Investigation report of Informal Vending at Ward strip Demonstration Primary School and Coronation Primary School in National Capital District—August 2023.
16. Monica Nakilai	Environmental Health Officer	A surveillance review of poor food handling practices by food businesses in Moresby northwest electorate, National Capital District, January to April 2023.	Investigation on selling of stale freezer meat products in 30 supermarkets in NCD July, 2023.
17. Shirelyanne Hyukai	Welfare Officer-Health & Wellness	Assessment of the number of illnesses of PNG Customs Officers by Insurance claims in PNG from January to March 2023.	Outbreak investigation of Malaria cases by PNG Customs officers and dependents through medical insurance claims from January to August 2023 in NCD.
18. Nicole Kauri	Medical Lab Manager	Surveillance review on incidence of positive mycobacterium tuberculosis, Kimbe WBNP, January to June 2022.	An assessment of possible factors associated with TB in Kimbe Hospital, August 2023.

Plans for the remaining 2023 and 2024

As we reflect on the achievements of 2022-2023, our focus now transitions to the plans for the remainder of 2023 and into 2024. In the upcoming year, FETPNG is committed to further strengthen the nation's capability to prevent, detect, and respond to health issues, with a particular emphasis on reinforcing provincial surveillance of epidemic-prone diseases and ensuring timely verification and response to alerts under a One Health approach.

To achieve these goals, FETPNG will continue its efforts by graduating two more cohorts of the f-FETPNG program in 2024, thereby enhancing field epidemiology workforce capability in two additional provinces. Additionally, there will be a specific focus on providing additional training to faculty members, equipping them with enhanced mentorship skills and knowledge to guide f-FETPNG fellows effectively.

The impact evaluation has finished the data collection phase, with analysis currently underway. To finalise the analysis, a two-week workshop is planned. The results from workshop evaluations and the impact evaluation are also serving as the foundational information for a major curriculum review. A week-long faculty workshop has been scheduled to ensure the practical experiences of faculty are seamlessly integrated into the curriculum. These strategic initiatives aim to sustain and advance the program's impact in strengthening public health, animal health, and environmental health capacity, along with enhancing response capabilities in PNG.

Conclusion

In the context of PNG where over 85% of the population live in rural and remote locations, frontline workers are critical to identifying and responding to health threats. Joint training across sectors through f-FETPNG provides an important opportunity to build foundational skills in surveillance, outbreak detection and investigation, data analysis and interpretation, and communication; providing frontline workers with a common language and understanding. In addition, the relationships and trust formed during the training translate into enhanced communication through informal networks and joint responses to alerts after completion of the training program.

The Frontline program has taken a step in Papua New Guinea in line with the global commitment to the One Health initiative, aligning with the global One Health agenda, as well as our mission to collaborate with both national and international organizations to deliver the program.

The One Health f-FETPNG will continue to evolve as lessons are learnt and the program is rolled out in new provinces with their own unique needs. We also recognise that building capacity does not stop with one training, there is a need to ensure graduates are engaged in activities and professional development opportunities that build on the skills gained during the f-FETPNG training.



MR. BARRY ROPA

Program Manager for Surveillance & Emergency Response
& Director FETPNG