Intra-Action Review of the COVID-19 Response in Papua New Guinea

Results from a Survey of Advanced Field Epidemiology Fellows, March 2022

Field Epidemiology In Action

Papua New Guinea National Department of Health

FETPNG

Australian Government

Indo-Pacific Centre for Health Security

ADEPPt

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Cover photo: aFETPNG fellows engaged in a COVID-19 intra action review

Photo: aFETPNG fellows participating in the COVID-19 intra-action review process

Introduction

Since 1951, graduates of Field Epidemiology Training Programs (FETPs) have responded to disease threats around the world.[1] FETPs are applied training programs that develop skills in disease surveillance, response and operational research. Graduates collect, analyse, and interpret disease information, using this evidence to take actions to prevent disease and save lives. Over the past decade, FETPs have become increasingly recognised in national, regional, and global preparedness and response mechanisms. The International Health Regulations (IHR), revised in 2005 following the severe acute respiratory syndrome (SARS) outbreak of 2003, includes explicit targets for training field epidemiologists.[2 3] The Global Health Security Agenda, launched in 2014 to support IHR implementation, also identifies training as a key element in strengthening health security.[4] At the regional level, the Asia Pacific Strategy for Emerging Diseases (APSED and APSED III) identifies FETPs as important parts of IHR compliance.[5] Field epidemiologists provided critical assistance during the COVID-19 pandemic response, supporting activities such as surveillance, rapid response teams, case investigations, activities at points of entry, risk communication and community engagement.[6]

The intermediate level Field Epidemiology Training Program of Papua New Guinea (iFETPNG) commenced in 2013 with the express goal of addressing the countries critical public health workforce shortage. As of June 2022, there were 94 graduates working across all 22 Provinces of Papua New Guinea, with a further 9 undergoing training. With support from the Australian Government's Centre for Health Security, an advanced FETP (aFETPNG) commenced in 2019. The advanced program enrolled high performing graduates from the intermediate program. Shortly after the advanced program commenced, the COVID-19 pandemic began. The advanced FETP quickly adapted to focusing on the pandemic response by providing COVID-19 specific training and ongoing mentoring for fellows, many of whom occupied key leadership positions supporting the response. Border closures and internal travel restrictions prevented traditional face-face workshop training until Feb 2022.

This purpose of this study is to describe the involvement of advanced FETP fellows in the COVID-19 response and document the role of the intermediate and advanced FETPs in preparing them for this response. This report presents the findings from a survey of aFETPNG fellows and makes up one component of the FETPNG COVID-19 Intra-Action review conducted in March 2022. The other component, a facilitated discussion with fellows, is summarised in a companion report.

Methods

During the second face to face workshop for advanced FETP fellows in Papua New Guinea, we conducted an intra-action review examining the role of the FETP programs in preparing fellows for the COVID-19 response. As part of this review, a cross sectional survey was conducted with all enrolled advanced fellows. We designed a short 15 question survey (Annex A) with quantitative and qualitative components. The questions focused on the nature and role of the fellow's involvement in the COVID-19 response, their confidence in performing key field epidemiology tasks during the response, the relevance and importance of the FETP training in preparing them for their pandemic response roles, and how future FETP training could better prepare them for future public health emergency response activities. Written informed consent was obtained from all respondents; the survey was anonymous.

All advanced fellows currently enrolled in the program were eligible for inclusion in the study. The survey was administered using a paper survey and entered into excel for descriptive analysis. The qualitative data was summarised using content analysis to develop narrative thematic descriptions. The themes were refined with repetitive reviews of the data.

Results

Of the 17 enrolled advanced fellows, 15 (88%) responded to the survey. All 15 (100%) fellows were involved in the COVID-19 response in Papua New Guinea. In 2021, just over half (53%) of the fellows reported working full time on the response (Table 1).

Table 1. Approximate time aFETPNG fellows spent working on COVID-19 response in 2021 (n=15)

	Number	Percentage
Full time (5+ days/week)	8	53%
Often (3-4 days/week)	2	13%
Occasionally (1-2 days/week)	5	33%
Rarely (1-2 days/month)	0	0%

The main roles undertaken by fellows during the COVID-19 response are summarised in table 2.

Table 2. Main roles of aFETPNG fellows during COVID-19 response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Surveillance (Lead)	7	47%
Advocacy / advice to stakeholders	6	40%
Rapid Response Team Leader	5	33%
Contact tracing	5	33%
Training provider	4	27%
Surveillance (Support)	3	20%
Data management / analysis	3	20%
Risk communications	3	20%
Response / control activities	3	20%
Rapid response Team Member	2	13%
Ports of Entry (Cluster Lead)	2	13%
Incident Manager	2	13%
Clinical / Case Management	2	13%
Community engagement	1	7%
Operational research	1	7%
Case investigation	1	7%
Clinic management	1	7%
Situation report writing	1	7%
Call centre support	1	7%
Finance and logistics	1	7%

The majority (80%) of advanced fellow received specific training to support them in the COVID-19 response. The types of training received by fellows is shown in table 3.

In addition to receiving training, almost all (93%) the aFETPNG fellows were involved in training others. aFETPNG fellows reported conducing, on average, 4 training activities (range 1-15), training an average of 53 people (range 10-200) in 2021. A total of 734 people were trained by the 15 aFETPNG fellows. The topics of the training session delivered by aFETPNG fellows is shown in table 4.

Table 3. Training undertaken by aFETPNG fellows during the COVID-19 response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Rapid Response Team Initiation	4	33%
Infection Prevention and Control	4	33%
COVID-19 (general training)	3	25%
Training for COVID-19	2	17%
Specimen Collection for COVID-19	1	8%
Risk Communication	1	8%
Social Mobilization	1	8%
Waste management	1	8%

Table 4. Training delivered by aFETPNG fellows during the COVID-19 response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Infection Prevention and Control	8	57%
Surveillance	7	50%
Specimen Collection	6	43%
Specimen Testing	3	21%
Risk Communications	2	14%
COVID-19 Awareness	2	14%
Contact Tracing	2	14%
Clinic Triage	1	7%
Community Engagement	1	7%
Vaccination	1	7%
Case Finding	1	7%
Case Management	1	7%
Rapid Response	1	7%
Emergency Response Planning	1	7%
Risk Assessment	1	7%

The level of confidence reported by fellows in supporting or leading key field epidemiology activities is summarised in table 5. Across all the key competencies, the majority of fellows reported feeling moderately confident or very confident in supporting and leading these activities. Fellows felt most confident supporting or leading case investigation and contract tracing activities. Fellows felt least confident supporting or leading risk communication, community engagement, specimen handling and shipping, and infection prevention and control activities.

Table 5. Self-reported level of confidence in supporting or leading key field epidemiology activities during the COVID-19 response, advanced FETP fellows (n-15), Papua New Guinea, February, 2022.

SUPPORTING (n=15)	Not confident	Slightly confident	Moderately Confident	Very confidence
Risk Communication	0%	27%	47%	27%
Community Engagement	0%	33%	40%	27%
Specimen Collection	0%	20%	13%	67%
Specimen handling and shipping	7%	33%	13%	47%
Case investigation	0%	0%	27%	73%
Contract Tracing	0%	0%	33%	67%
Surveillance	0%	0%	40%	60%
Data management	0%	20%	33%	47%
Data analysis	0%	20%	53%	27%
Infection Prevention and Control	0%	33%	53%	13%
LEADING (n=15)				
Risk Communication	7%	27%	33%	33%
Community Engagement	7%	27%	40%	20%
Specimen Collection	0%	20%	13%	67%
Specimen handling and shipping	7%	20%	27%	47%
Case investigation	0%	0%	20%	80%
Contract Tracing	0%	0%	27%	73%
Surveillance	0%	0%	40%	60%
Data management	0%	13%	53%	33%
Data analysis	0%	13%	60%	27%
Infection Prevention and Control	0%	27%	47%	27%

When asked what the three biggest challenges faced during the COVID-19 response, the most common were delays in accessing funds and the lack of human resources, followed by challenges associated with misinformation and rumours surrounding COVID-19 and the COVID-19 vaccines (Table 6).

Table 6. The most significant challenges faced by fellows during the COVID-19 response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Delay in Accessing Funds / lack of financial resources	6	40%
Lack of Human Resources	6	40%
Misinformation / Rumours / Fears about COVID-19 and/or COVID-19 vaccines in community	5	33%
Vaccine Hesitancy (including impact on Routine Immunization)	4	27%
Staff Competency lacking (swabbing, surveillance)	4	27%
Poor Coordination / lack of senior leadership	3	20%
Vaccine Rollout challenges / vaccine Hesitancy / Inadequate Advocacy	3	20%
Staff not willing to Multi-Task / support COVID-19 response	3	20%
Lack of Financial Resources	2	13%
Inadequate Logistics to support response (including transport and communications)	2	13%
Lack Consumables, including PPE	2	13%
Staff fear of COVID-19	2	13%
Stigma and Discrimination of Staff and Patients	2	13%
Poor community engagement / no proper risk communication	1	7%
Inadequate Consultation from NDoH/NCC	1	7%
Poor Utilization of Field Epis	1	7%
Political Agenda affecting control measures	1	7%
Infection Prevention and Control measures not practiced	1	7%
Public not complying with control measures (new normal)	1	7%
Poor waste management	1	7%
Staff knowledge and attitudes towards COVID-19 (spreading misinformation)	1	7%
Refusal to get tested early	1	7%

Note: responses mentioned above were based on the open-ended question: "What were the 3 biggest challenges you faced during the COVID-19 response?"

Most of the fellows (93%) reported that the intermediate and advanced programs were very helpful in preparing them for the COVID-19 response, with 7% indicating the programs were moderately helpful. Specific examples of how the FETPNG training helped the fellows is summarised in Table 7. A majority (79%) of fellows specifically identified training in data management, analysis and interpretation as being helpful in preparing them for the pandemic response.

Table 7. Examples of how the intermediate and advanced FETPNG programs helped prepare aFETPNG fellows for the COVID-19 response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Knowledge and skills in data management, analysis and interpretation	11	79%
Knowledge and skills in outbreak response	5	36%
Knowledge and skills in surveillance	5	36%
Confidence in decision making and giving advice to management	5	36%
Ability to conduct operational research	2	14%
Writing situation reports	2	14%
Evidence based decision making	2	14%
Confidence in managing case investigations	2	14%
Ability to lead rapid response team	2	14%
Leadership skills	2	14%
Network with colleagues	1	7%
Supporting immunization programs	1	7%
Public speaking	1	7%
Capacity building	1	7%
Confidence	1	7%
Responding to public	1	7%

Note: responses mentioned above were based on the open-ended question: "Can you give specific examples of how the intermediate and/or advanced FETPNG programs have helped prepare you or support you in your COVID-19 response?"

When asked what FETPNG could do better to prepare fellows for an emergency response such as COVID-19, a majority of fellows (57%) indicated further training in data management, analysis and interpretation. Additional training on risk communication (36%) and community engagement (21%) were commonly mentioned, along with training on psychological first aid (29%).

Table 8. Things FETPNG could do to better prepare aFETPNG fellows for another emergency response (n=15), Papua New Guinea, February 2022

	Number	Percentage
Further training on advanced data management, analysis and interpretation	8	57%
Further training on risk communications	5	36%
Training on psychological first aid	4	29%
Training on community engagement	3	21%
Opportunities to apply field epi concepts more broadly	2	14%
Further training on report writing	2	14%
Training on managing multiple emergencies	2	14%
Training on managing an emergency response while maintaining routine services	2	14%
Include RRT training in FETP training	1	7%
Further training on Infection, Prevention and Control	1	7%
Training on gender issues	1	7%
Training on presenting situation reports to management	1	7%
Further training on leadership and management skills	1	7%
Further training on specimen handling, shipping and transport	1	7%
Further training on monitoring and evaluation	1	7%

Note: responses mentioned above were based on the open-ended question: "What could the intermediate and/or advanced FETPNG programs do to better prepare you for another emergency response?"

Half (50%) of the fellows indicated that their manager was very aware of their skills as a field epidemiologist (36% were somewhat aware and 14% were not aware). Most of the fellows (79%) indicated that their skills as a field epidemiology were well used by their managers during the COVID-19 response. Ways to better utilise the skills of field epidemiologists by management is shown in Table 9.

Table 9. Ways to improve the use of FETPNG graduates by management (n=15), Papua New Guinea, February 2022

	Number	Percentage
Utilize field epis in leadership positions for data management and surveillance	5	36%
Use field epis for leading/supporting outbreak response activities	5	36%
Include field epidemiology positions in workforce structure	4	29%
Recognize potential for field epis and use them appropriately	2	14%
Provide sensitization training to management	2	14%
Use field epis in management roles	2	14%
Present research and intervention results to management	2	14%
Providing ongoing advice	1	7%
Ensure field epis are confident in handling any responsibility	1	7%

Note: responses mentioned above were based on the open-ended question: "What could be done to improve the use of FETPNG graduates by management?

Discussion

Role of Fellows in the COVID-19 Response

All aFETPNG fellows surveyed were involved in the COVID-19 response, many of them in leadership positions. With over 700 individuals trained by the 15 aFETPNG fellows, their influence during the response was considerable. The number of staff supervised further highlights aFETPNG fellows as important public health influencers within the health system of Papua New Guinea. Fellows were able to apply core field epidemiology competencies across a range of roles within the response.

Areas for Improvement

While the majority of fellows found the FETP training very helpful in preparing them for a pandemic response, they identified areas for improvement. The level of confidence in supporting or leading key field epidemiology activities highlighted key areas for strengthening.

While methods for *specimen collection and handling* is introduced during FETP training, a number of fellows did not have a high level of confidence to undertake these activities. As many FETP fellows are clinicians, further emphasis on specimen collection and handling should be considered within FETPNG programs. *Risk communication and community*

engagement were also areas requiring additional focus. These two activities are increasingly becoming recognised as amongst the most important in a response. In addition to placing greater emphasis and spending more time on these topics during the FETP training, additional activities to develop skills and confidence in these areas is likely required.

Data management, analysis and interpretation lies at the heart of field epidemiology training. Being able to use data to guide public health action is ultimately what field epidemiologist do. Considerable time is devoted to developing these skills in both the intermediate and advanced programs. However, feedback from this survey indicates more is required. The reported confidence levels suggest further training is required. When asked specifically about what FETPNG could do better to help prepare fellows and graduate for an emergency response, further training on data management, analysis and interpretation was the most common factor identified. When asked to provide examples of how FETP training helped prepare fellows for the COVID-10 response, knowledge and skills in data management, analysis and interpretation was mentioned more than anything else. As one of the most critical core competencies, it is important that field epidemiology graduates master these skills. With limited face-face classroom time in the intermediate and advance FETPs, allocating more time to these competencies would inevitably impact on other competencies. Supplementary training, tools and resources is recommended to develop the level of confidence required to see transformational changes in the workplace. FEPTNG has already recognised this need and commended the development eLearning modules, including one on 'excel for field epis'. These supplementary materials could be expanded to include modules on analysis and interpretation. FETPNG is also in the process of developing a technical field manual and intensive workshops which will provide further support for graduates. Additional training requests that fall outside for scope of the FETP programs should be considered for inclusion in companion training programs, such as Rapid Response Team training and post-graduation intensive workshops.

Utilization of Field Epis

Most of the fellows (86%) indicated that their managers were aware (very aware or somewhat aware) of their skillsets as trained field epidemiologists; most (79%) also said they were well utilised in the response by their manager. These results are encouraging and highlight the recognition of FETP graduates and fellows in their workplaces. When asked about ways to improve the use of FETPNG graduates by management, several fellows mentioned having *designated positions* within the public health system for field epidemiologists. There is currently only one officially designated field epidemiologist position in PNG, located in the Eastern Highlands Provincial Health Authority. While awaiting the creation if additional dedicated positions, *sensitization training and advocacy* with senior management at all levels of government will ensure effective use of field epidemiologists for supporting both routine public health programming and emergency response activities.

Key Recommendations

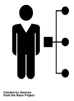
Revise the intermediate and advanced FETPNG curricula to include additional training on risk communication and community engagement

Develop supplementation training, tools and resources to enable fellows and graduates to master core FETP competencies, such as

- eLearning modules
- Intensive face-face workshops
- FETP technical manual

Support graduates in the ongoing application of FETP knowledge and skills in the workplace, such as

- Mini grants for operation research
- Ongoing access to mentors
- Mechanisms and resources to support mobilization of graduates for outbreak response activities nationally and regionally
- Coordination of surveillance strengthening initiatives



Develop and deliver a sensitization training program for senior management to promote the best utilization of field epidemiology graduates in the workplace

Advocate for creation of additional designated field epidemiology positions with the public health service, providing a clear career pathway for graduates

Conclusion

Papua New Guinea is committed to developing its public health workforce through field epidemiology training. A survey of advanced fellows highlighted the substantial contribution of graduates in the COVOD-19 response. The diversity of their roles highlights the versatility of field epidemiology in public health emergencies. Several important recommendations resulted from the survey and will be used by the FETPNG faculty to further strengthen core and complementary FETP training programs.

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Annex A

Advanced FETPNG fellows involvement and readiness for COVID-19 response

CONSENT

The PNG National Department of Health and the University of Newcastle are conducting an intra action review of select graduates (advanced fellows) involvement and readiness for COVID-19 response

The information you provide will be used to improve the current program and to inform future programs and projects.

Participation in this survey is voluntary, and you don't have to participate if you don't want to. Please review the following points before consenting to participate:

- I agree to participate in the above research project and give my consent freely.
- I understand that the project will be conducted as described in the Information, a copy of which I have retained.
- I understand I can withdraw from the project at any time, and do not have to give any reason for withdrawing.
- I consent to completing a questionnaire.
- I understand that this survey is anonymous and my identify will not be known to researchers.
- I have had the opportunity to have questions answered to my satisfaction.

Do you consent to participate in the following survey?

[ ] Yes

[ ] No (end survey)

1. Have you at any time been involved in the COVID-19 response?
   [ ] Yes

   [ ] No (skip to Q8)

2. Approximately how much of your work time was spent on COVID-19 response in 2021?
   [ ] Rarely: 1-2 days per month

   [ ] Occasionally: 1-2 days per week

   [ ] Often: 3-4 days per week

   [ ] Full time working on the response: 5+ days per week

3. What was your role(s) in the COVID-19 response?

_____

_____

_____

_____

4. How many people did you typically supervise at any given time while working on the COVID-19 response?

_____ (if none, specify '0')

5. Besides FETPNG and aFETPNG, did you receive any training to help you with the COVID-19 response?
   [ ] Yes
   [ ] No
   [ ] Don't know

   If Yes, please specify all relevant trainings you attended

_____

_____

6. Did you conduct any training to support others in the COVID-19 response?
   [ ] Yes
   [ ] No
   [ ] Don't know

   If Yes, How many trainings did you conduct in 2021? _____

   Approximately how many people in total did you train in 2021? _____

   What did you train people to do? _____

   _____

   _____

7. What were the 3 biggest challenges you faced during the COVID-19 response?

   a) _____

   _____

   _____

   b) _____

   _____

   _____

   c) _____

   _____

   _____

8. How confident did you [would you] feel in supporting these activities for the COVID-19 response

	Not confident	Slightly confident	Moderately Confident	Very confidence
Risk Communication				
Community Engagement				
Specimen Collection				
Specimen handling and shipping				
Case investigation				
Contract Tracing				
Surveillance				
Data management				
Data analysis				
Infection Prevention and Control				

9. How confident did you [would you] feel in leading these activities for the COVID-19 response

	Not confident	Slightly confident	Moderately Confident	Very confidence
Risk Communication				
Community Engagement				
Specimen Collection				
Specimen handling and shipping				
Case investigation				
Contract Tracing				
Surveillance				
Data management				
Data analysis				
Infection Prevention and Control				

10. Overall, how helpful has the intermediate and advanced FETP program been in preparing you for the COVID-19 response?
    [ ] Not helpful
    [ ] Slightly helpful
    [ ] Moderately helpful

[ ] Very helpful

11. Can you give specific examples of how the intermediate and/or advanced FETPNG programs have helped prepare you or support you in your COVID-19 response?

_____

_____

_____

_____

_____

12. What could the intermediate and/or advanced FETPNG programs do to better prepare you for another emergency response?

_____

_____

_____

_____

_____

13. How aware is your manager of your skills as a field epidemiologist?
    [ ] Not aware
    [ ] Somewhat aware
    [ ] Very aware

14. Were your skills as a FETPNG graduate well used by your manager during the COVID-19 response?
    [ ] Yes
    [ ] No
    [ ] Don't know

15. What could be done to improve the use of FETPNG graduates by management?

    _____

    _____

    _____

    _____

Thank you so much for taking the time to complete this survey.