



THE UNIVERSITY OF PAPUA NEW GUINEA

To all students and staff:

You will all be aware that the Corona virus (Covid-19 virus) is causing much anxiety worldwide. It is a matter of great concern for us here in Papua New Guinea even though, as yet, there have been no cases of the virus confirmed. I would like to inform you that the Senior Management of the University have been taking this matter extremely seriously and have produced a "Covid-19 Virus Threat – University Business Continuity Plan".

With this plan we seek to ensure that the University is as well-prepared as possible through being proactive in our contingency plans for the health and safety of students and staff should Covid-19 become a reality here in Port Moresby. The plan has four stages.

Stage 1, which is where we are at present, recognises that we are in the pre-confirmation phase of a national threat (the Government's code green). We are adopting an attitude of 'watchful waiting'. We have identified an Emergency Management Group and are ensuring that we have the necessary strategy and materials to take appropriate public health measures and can appropriately manage and organise our campuses. Online training by the World Health Organisation is being organised for our Health Service staff. ***All staff travel outside Port Moresby which is not deemed essential is now being discouraged.***

Stage 2 starts where the first confirmed case has been identified in PNG and the risk of spread remains low (Government code orange). Business as usual will continue, but we will encourage increased attention to personal and environmental hygiene with an appropriate health education program and a strong communications strategy. Entrance to campuses and other facilities will be restricted to staff, students and essential suppliers only. Preparations will also be made for the possibility of the next stage.

Stage 3 happens when cases are not traceable and an epidemic is likely/happening (Government code red); advice will be taken from the national and NCD public health authorities. At this stage, all teaching will be cancelled and moved, where possible, to online learning through Moodle and/or other social media platforms such as WhatsApp groups, Messenger groups, MOOCs etc. Campuses will be closed and a decision will be made regarding resident students who prefer to travel home rather than remaining with family/friends in Port Moresby. Also, plans will be in place for lowering risks to resident

students prior to their leaving the campuses. Only very essential staff will be asked to remain at work; all others will work from home.

Our clinic services will be reconfigured to meet **only** the needs of students and staff and their families. Most of our students are not at high risk of serious consequences from the virus, but a quarantine facility will be identified on each campus. Those who are seriously ill will be referred to quarantine facilities provided nationally.

Stage 4 is the recovery/reopening phase which will only happen when we are advised by government that it is safe to resume business as usual. A recovery plan will be put into operation to bring the university operations back to normalcy.

As we all know, this issue has had a lot of coverage and attention in the media and social media and it's only natural for all of us to feel concerned. I trust that the measures we have put in place reassure you that the University is taking this matter very seriously and has the health and safety of all staff and students at the centre of its considerations. For your information I am attaching advice published by the Papua New Guinea government.

If you require further information, you should contact our resident doctor: Dr. Chris Kinipi at our Health Clinic.

With best wishes, hoping that our plan will not have to be put into operation

Professor Frank Griffin
Vice Chancellor

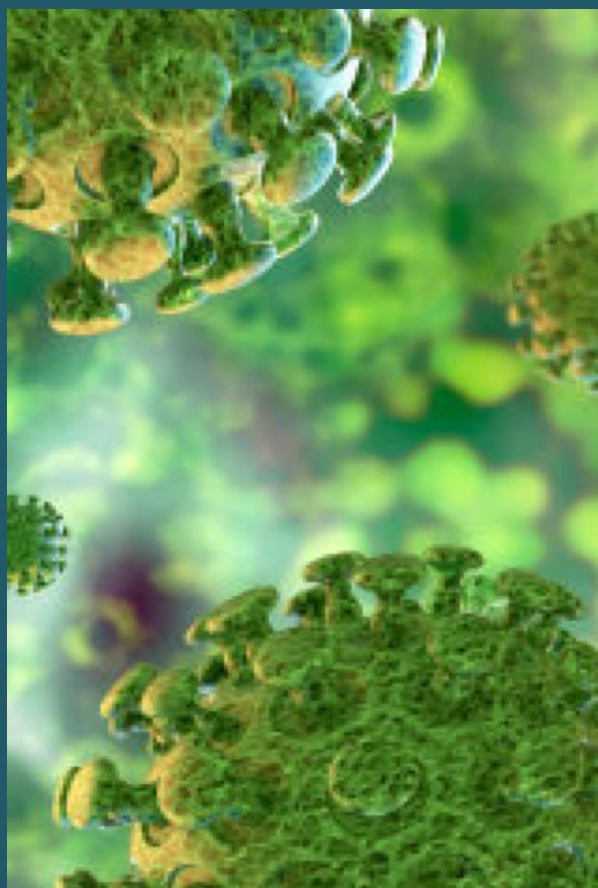


DEPARTMENT OF HEALTH

Papua New Guinea

Emergency Preparedness and Response Plan

Coronavirus disease 2019 (COVID-19)



Version 17 -- as of 02 March 2020

(This is a live document and will be periodically updated based on the evolving situation.)

FOREWORD

Hon Jelta Wong

Minister for Health and HIV/AIDS

2 March 2020



Papua New Guinea is one of the most at-risk countries in the world when it comes to health security threats. Our location in the tropics and on the Pacific Ring of Fire makes us prone to natural disasters. At the same time, our country is vulnerable to the spread of infectious diseases whether they happen in country or imported from outside.

Our health system, amidst the limitations, had been able to respond to various health threats in the past. In 2018, polio re-emerged in PNG after 18 years; while in 2019, we had sporadic cases of measles. In both events, our responders and health workers were able to manage the response. We were able to maximize the interventions to vaccinate more than 3 million of our children against measles and polio. We are grateful to the support of our long-term partners – the World Health Organization (WHO), United Nations Children's Fund (UNICEF), GAVI, and the Governments of Australia and New Zealand for the technical, material and financial support.

During my short time as Minister for Health and HIV/AIDS, the greatest challenge we now face as a part of the global community, and as a country, is the threat of coronavirus disease 2019 (COVID-19). This assessment of risk of spread and risk of impact of COVID-19 is **very high** at the global level – and this very high risk assessment also applies to PNG.

The Marape-Davis government takes preparedness and response to COVID-19 very seriously. We have set up a Ministerial Committee consisting of key ministries that will drive the outbreak response at the government level and an inter-government National Task Force to coordinate the different government departments, partner agencies and the private sector. At the operations level, we have activated the Emergency Operations Center (EOC) since late January. We have set up teams to protect our ports of entry -- both at the airports and the seaports. The National Department of Health (NDOH) has ramped up surveillance and rapid response teams, our laboratory is ready to test samples, our doctors and health workers are preparing the hospitals and health facilities, we are educating our public on how to protect themselves and address rumors and fake news; and we are equipping our health workers and staff to ensure they protect themselves appropriately. We are also working with the Provincial Health Authorities (PHAs) to ensure that they are prepared and have a costed emergency response plans that will be used to mobilize resources.

This Emergency Preparedness and Response Plan for COVID-19 outlines key actions that we need to take as a country at various phases and scenarios for COVID-19. To implement the plan, our government has approved an initial K45.3m. More resources will be provided when we need them.

The Marape-Steven government remains committed to the health and welfare of our people – and will continue to do so not only for COVID-19 but also to address any infectious diseases outbreaks. I urge everyone to join together as families and communities – we need ensure that we remain vigilant and be in solidarity to protect our country against this virus.

I would like to thank all the partners especially WHO, DFAT, MFAT, the private sector and all the individuals who have donated funds or equipment to support our country. I would also like to sincerely thank all health workers and other staff in the department and the provinces who continue to work hard to provide the critical health services to our people.

MESSAGE

Dr Paison Dakulala

Acting Secretary. NDOH

2 March 2020



The outbreak of coronavirus disease 2019 (COVID-19) is a threat to the global community and we share the same level of risk of spread and impact with the rest of the world. As our other countries respond to this outbreak, it is not a question of whether the virus will come to Papua New Guinea, but when it will come.

Papua New Guinea must be ready – to manage any possible case, prepare our health workers and facilities to treat patients and prepare our communities in the event of community transmission. We must consider all possible scenarios and have plans in place to respond to all possibilities.

This PNG Emergency Preparedness and Response Plan for COVID-19 will form the basis on which our country will respond to this outbreak. We have been given high-level support by the Government with the establishment of the Ministerial Committee which our Minister for Health and HIV/AIDS chairs. We have set up a National Task Force to coordinate our inter-government, donor and partners response initiatives.

At the operational level, we have re-activated the National Emergency Operations Centre (NEOC) that was set up during the polio outbreak in June 2018. We have an incident management system, with people responsible in key focus areas: 1) Incident management; 2) Surveillance and rapid response; 3) Laboratory; 4) Clinical management and health care services; 5) Infection prevention and control; 6) Non-pharmaceutical public health measures; 7) Risk communication and community engagement; 8) Points of entry; 9) Operational logistics; and 10) Partner coordination. We are also providing support to the Provincial Health Authorities (PHAs) for the preparedness at the provincial level.

This Plan has outlined color-coded scenarios – from alert phase (code green), to containment (code orange), to mitigation (code red), and to recovery (code white). I urge everyone including the provinces, partners and the private sector to use this plan to support our national outbreak response. The Plan is a live document and we will continue to update as needed.

Our government has committed to support the NDOH to respond to this outbreak and has approved an initial K45.3m to support the outbreak response all over the country

I thank my team at NDOH who are working tirelessly to prepare our country for COVID-19. I express my appreciation to our partners and donors who continuously support us. I thank the frontline health workers who continue to provide the critical health services to our people.

This plan was developed with the health and welfare of every PNG citizen in mind – and we urge all of you to be in solidarity with the Government. We can only fight this threat successfully if we work together as one nation.

Papua New Guinea Emergency Preparedness and Response Plan Coronavirus Disease 2019 (COVID-19)

BACKGROUND

Health security threats, particularly outbreaks of new or emerging infectious diseases, natural disasters and conflict, and unsafe food, will continue to impact people's health and well-being. Not only will the risk of future events continue, but they are likely to become more complex due to an increasingly interconnected world that is facing significant changes in the social, environmental and economic landscape.

Papua New Guinea (PNG) has its share of health security threats and has experienced outbreaks and emergencies. The country had its first recorded cholera outbreak in 2009-2011 infecting 15,500 people, of which more than 500 died. Between 2012 and 2013, the country suffered from its first chikungunya outbreak that affected all the 22 provinces.

In 2014, a big measles outbreak hit PNG and resulted in 4968 cases and 365 deaths. Sporadic outbreaks were also recorded in 2017 and 2018, noteworthy of which was the outbreak in West Sepik in 2017. Between 2015-2016, PNG suffered the effects of one of the worst El Niño climatological disturbances in history, resulting in widespread drought with dire consequences for hygiene and food security. The Government estimated that 700,000 people were severely impacted and 480,000 people faced critical food shortages.

In 2018, two major health emergencies hit PNG. A 7.5 magnitude earthquake struck the five provinces in the Highlands Region in February affecting 544,000 people, of which 125,000 were children. In the same year, polio re-emerged in the country after 18 years when an outbreak of circulating vaccine-derived poliovirus type 1 (cVDPV1) was confirmed in June putting more than 3.3 million children at risk. Both events were declared national emergencies by the Government of Papua New Guinea and massive response operations were launched.

Diseases that originate from other countries also pose threats to PNG such as the Severe Acute Respiratory Syndrome (SARS) in 2002-2003; pandemic influenza A(H1N1) in 2009, Middle East Respiratory Syndrome (MERS-CoV) in 2012-2014; Zika in 2016, and most recently, the coronavirus disease 2019 (COVID-19).

These increasingly complex health security threats demand ongoing development of core capacities, as mandated under the International Health Regulations (2005), the agreed legal framework among Member States for detecting, preparing for and responding to public health emergencies. In the Western Pacific Region, the *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies* (APSED III), provides a common framework for action to strengthen the IHR core capacities and in developing preparedness and response plans for all kinds of health security threats. In Papua New Guinea, the National Action Plan for Health Security is being drafted to provide a framework for preparedness and response to health security threats.

This Emergency Preparedness and Response Plan lays out the probable scenarios of the outbreak of COVID-19 in Papua New Guinea, identifies triggers and alerts to scale up the response and outlines recommendations by the National Emergency Operations Centre. The preparedness measures will also be an investment to strengthening the capacity of the country for health security for the long-term.

This plan is a live document that will be periodically updated based on evolving global, regional and country situation and risk assessment.

COUNTRY CONTEXT

The current population of Papua New Guinea (PNG) is more than 8.5 million people, 85% of which live in rural communities that are hard to reach. It is administratively divided into 22 provinces and 89 districts. The country geographically shares international borders with Indonesia on the west of island of New Guinea, Australia on the south, Solomon Islands on the south-east, and the Pacific Ocean. It is the biggest in terms of land mass and population of all the Pacific Island Countries, Territories and Areas.

Port Moresby in the National Capital District is the capital city of PNG, where the Jacksons International Airport is located. Port Moresby has international flights from Australia, Federated States of Micronesia, Fiji, Philippines, Singapore, Hong Kong and Solomon Islands on daily basis. Additionally, there are private international charters between Australia and mining sites. There are 15 seaports in PNG that are accessible by commercial vessels throughout the region. There are a number of land borders, notably in West Sepik and Western Province, that are porous and there is active movement of people on a daily basis.

The development of road networks and frequency of travel expose many people to a range of health risks. As people move from one place to another, diseases travel with them. In PNG, inter-province migration continues due to employment opportunities and displacement of people affected by civil unrest. These movements affect people's health-seeking behaviour and access to health services.

Papua New Guinea has a weak health system and is facing an ageing health workforce. These problems are more prominent in the provinces and hard-to-reach areas because of difficult terrain and risky conditions.

EXISTING FRAMEWORKS FOR EMERGENCY PREPAREDNESS AND RESPONSE

The following global, regional and national frameworks underpin the development of the Preparedness and Response Plan for coronavirus disease (COVID-19):

- ❑ The **International Health Regulations (2005)** is the agreed legal framework among Member States for detecting, preparing for and responding to public health emergencies. Papua New Guinea is a signatory of IHR.
- ❑ In the Western Pacific Region, the **Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III)**, provides a common framework for action to strengthen the IHR core capacities and in developing preparedness and response plans for all health security threats.
- ❑ To operationalize IHR and APSED, Papua New Guinea is in the process of developing a **National Action Plan for Health Security** that will provide a framework for preparedness and response to health security threats.
- ❑ PNG has a **Disaster Management Act of 1984** that establishes a machinery for forward planning to ensure efficient, prompt and effective management and control of natural disasters.
- ❑ **PNG's National Disaster Risk Reduction Framework 2017 – 2030** aligns with the Sendai Framework for Disaster Risk Reduction that was endorsed by UN Member States, including PNG, that aims to achieve substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets.
- ❑ To manage all types of emergencies, PNG has **Multi-Hazard Contingency Plan 2019** to guide the Disaster Management Team's contingency plan for sudden-onset emergencies outlining the roles of the various sectors.
- ❑ **WHO's Strategic Preparedness and Response Plan for coronavirus disease (COVID-19)** is the overarching global framework in developing a plan that outlines the public health measures that the international community stands ready to provide to support all countries to prepare for and respond to COVID-19.

CORONAVIRUS DISEASE 2019 (COVID-19) OUTBREAK

On 7 January 2020, the Government of China identified a novel coronavirus from a cluster of pneumonia cases of unknown aetiology in Wuhan City, Hubei Province. The virus has spread throughout China, and has also been identified in a growing number of countries around the world. Most cases confirmed in other countries as of end of January 2020 have been linked to China through travel history, or close contact with a person with a history of travel to China.

The outbreak was declared a public health emergency of international concern on 30 January 2020. The situation continues to evolve rapidly in China and internationally, and further spread of the virus should be anticipated.

There are still many unknowns about the virus including the clinical spectrum of disease, its severity and transmissibility. These factors are critical to enable evidence-informed risk assessments to be conducted, and to determine appropriate and proportional public health responses. In the absence of this knowledge, countries are encouraged to leverage IHR core capacities and existing national influenza pandemic plans to prepare for multiple scenarios, from importation of cases, containment and mitigation.

The Government of Papua New Guinea (PNG) through the National Department of Health (NDOH) has developed a preparedness and response plan that outlines the strategic components for managing a public health response to COVID-19. The plan considers priority actions to take in the event of community transmission. This plan is a live document that will be regularly updated based on the evolving situation and as more information is generated about the outbreak.

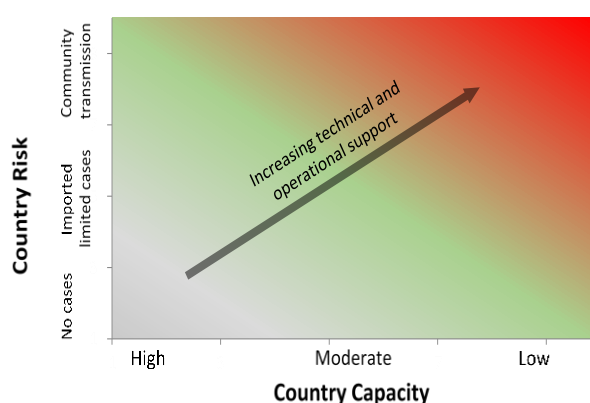
RISK ASSESSMENT FOR PAPUA NEW GUINEA

As of 28 February 2020, the World Health Organization (WHO) has increased the assessment of the risk of spread and risk of impact of COVID-19 to **very high** at the global level. *(Note that the risk assessment is updated regularly based on new information.)* The very high risk assessment applies to PNG. For preparedness and response planning purposes, the following factors were also considered in Papua New Guinea:

- ☐ PNG is geographically accessible by air, sea and land through its points of entry.
- ☐ PNG health system has limited capacity and resources to manage a potential large-scale response.
- ☐ Given the high profile nature of the outbreak and with the massive coverage in international and social media, the public risk perception is high. The PNG public is very concerned and has strong opinions on the health measures that need to be in place.

Figure 1 below shows the framework for assessing the likelihood of an event and its impact, in relation to the country capacity to respond.

Figure 1: Framework for assessing risk and the capacity to respond



OBJECTIVES and PRIORITY MEASURES

The overarching objective of PNG's preparedness and response plan is to minimize health, social and economic impact resulting from COVID-19 to the people and communities of Papua New Guinea.

Specifically, this will focus on the following:

- ❑ Prevent or delay the entry of the virus, contain imported cases, and prevent local transmission by timely detection, rapid response and ensuring public trust and community participation.
- ❑ Strengthen the core capacities for health security as mandated under the IHR (2005).
- ❑ To mitigate health, social and economic impact of the outbreak.

If local epidemiological data indicates that community transmission is occurring, the priorities will be given to measures aimed at active surveillance, monitoring the spread and characteristics of the virus, identifying and managing severe cases, preventing onward transmission of the virus, alleviating strain on healthcare services, informing the public and reducing overall social and economic impact.

PRIORITY AREAS OF THE PLAN

The preparedness and response plan for COVID-19 in Papua New Guinea will focus on 10 priority areas that are interlinked:

1. Incident management and planning
2. Surveillance, risk assessment and rapid response
3. Laboratory
4. Clinical management and health care services
5. Infection prevention and control
6. Non-pharmaceutical public health measures
7. Risk communication and community engagement
8. Points of entry
9. Operational logistics
10. Partner coordination



PLANNING AND RESPONSE SCENARIOS for COVID-19 in PAPUA NEW GUINEA

The following possible scenarios are considered that would signal a scale up of the response measures. Triggers are also identified primarily because of the still many unknowns surrounding the disease.

Code	Trigger Scenario	Expected actions
Green	No case of COVID-19 in PNG <i>(Cases are reported outside of Papua New Guinea)</i>	<u>ALERT PHASE</u> <i>Incident management and planning</i> ☐ Generate political will at the highest level based on the principles of the International Health Regulations (IHR, 2005), and according to national legislations and frameworks ☐ Develop, pass and/or amend legislation to support scale up of response (e.g., Quarantine Law, State of Emergency, measures that restrict movement, establishment of temporary care centers, etc) ☐ Mobilize an inter-ministry mechanism for high-level leadership, all-of-government response ☐ Organize an Intersectoral Coordination Task Force for COVID-19 to oversee the overall implementation of the emergency preparedness and response plan, with representation from government departments, development organizations, hospitals and private sector. ☐ Activate the incident management system (IMS) and national emergency operations center (NEOC) to manage day-to-day preparedness and response activities ☐ Identify lead persons and experts per technical cluster ☐ Activate the provincial preparedness and response through the Provincial Emergency Operations Center and monitor progress ☐ Allocate funds and resources for all phases of the response ☐ Develop/agree on protocol for decision-making related to non-pharmaceutical measures, including declaration of State of Emergency, social distancing interventions (work-at-home arrangements, school closure, postponement of festivals, etc) ☐ Develop and implement mechanism to coordinate information and data from all clusters and sources to guide decision making and action ☐ Provide regular updates to all partners and stakeholders through situation reports and briefings ☐ Plan for any technical and material support to vulnerable provinces. ☐ Identify/appoint and train multi-disciplinary teams that will be deployed to provinces as immediate surge support ☐ Ensure that infection prevention and control (IPC) is implemented in all areas of interventions, and at all phases of the response <i>Surveillance, risk assessment and rapid response</i> ☐ Maintain international reporting to WHO via IHR reporting mechanisms. ☐ Periodically review and update COVID-19 case definitions and disseminate to public health units, health care facilities, surveillance sites, laboratories and points of entry. ☐ Implement a mechanism to gather, analyse and use reports/data from the surveillance system and from provinces to guide response planning and action ☐ Regularly monitor and review global data to guide risk assessment and response strategies ☐ Detect importation of cases through enhanced surveillance and enhanced reporting ☐ Develop surveillance strategies to actively monitor disease trends and impacts. ☐ Establish national hotline to report suspected cases. Provinces can establish their hotline as needed. ☐ Continue to use existing surveillance systems to collect data (e.g. event-based and indicator-based surveillance for influenza-like-illness (ILI), severe acute respiratory illness (SARI), acute febrile illness, pneumonia). ☐ Activate and re-train rapid response team for investigation and contact tracing. ☐ Ensure that surveillance and RRT staff are trained on IPC procedures and equipment and strictly adhere to those practices. ☐ Prepare staff and establish procedures to conduct systematic risk assessments. Use approaches that synthesize multiple sources of information for risk assessment to inform response decisions. <i>Laboratory</i> ☐ Prepare the Papua New Guinea Institute of Medical Research (PNGIMR) as the designated laboratory in PNG to test for coronavirus ☐ Develop, disseminate and implement protocol/guidelines/standard operating procedures (SOP) to collect, pack and ship samples from the provinces to IMR and manage the information/results from the laboratory (Note that all laboratory results should be sent to NDOH to ensure coordination) ☐ Develop SOP to coordinate and share results (from NDOH to the province, and the individual/family).

Code	Trigger Scenario	Expected actions
		☐ Ensure that the Central Public Health Laboratory (CPHL) is prepared to pack and ship samples from Central, Gulf and NCD; and to manage shipment of samples to international reference laboratory ☐ Activate the staff in all 22 provinces in the country who have been trained and certified by the International Air Transport Association (IATA) to collect, pack and ship laboratory samples ☐ Provide additional trainings as needed for more certified shippers and surge capacity ☐ Ensure sufficient supplies for laboratory testing/collection/packing/transportation ☐ Train/re-train laboratory technicians, including surge staff ☐ Ensure that laboratory personnel and those collecting and managing samples are trained on IPC procedures and equipment and strictly adhere to those practices. ☐ Establish arrangements with an international reference laboratory for testing and/or confirmation ☐ Prepare a surge plan to manage the increased volume of tests for the code red 4. <i>Clinical management and health care services</i> ☐ Adopt WHO clinical management guidelines and disseminate to all health facilities in the country ☐ Identify wards/areas for isolation and quarantine ☐ Equip national, provincial and other private hospitals to manage suspected cases ☐ Establish pre-triage areas in all health facilities to identify suspected cases ☐ Prepare clinical management protocol, referral system, including transport of suspected cases ☐ Establish teams and ambulances to transport suspected and confirmed cases to minimise contact risk, with appropriate PPE ☐ Train/re-train for doctors and health workers to treat patients and manage severe cases ☐ Organize an Emergency Medical Team (EMT) to deploy to affected/vulnerable provinces/areas ☐ Develop plan to prioritise treatment of severe and high-risk patients in case of code red ☐ Conduct regular simulation exercises to test the preparedness of the health facilities ☐ Plan to allocate areas for quarantine, isolation, increased surge of patients in case of code red, including for temporary care centers to manage mild cases ☐ Review stock management and procurement procedures for medicines, supplies and medical devices to provide treatment for COVID-19 patients and to maintain essential health services. ☐ Send communication and guidance to health workers and health facilities for readiness to identify and manage cases ☐ Ensure that personnel of hospitals and health facilities are trained on IPC procedures and equipment and strictly adhere to those practices ☐ Identify risks and improve ability to manage and treat comorbidities 5. <i>Infection prevention and control (IPC)</i> ☐ Activate the Government's policy and structure for IPC ☐ Identify IPC focal points for all areas and levels of preparedness and response and ensure that personnel are trained on practices and equipment and adhere to those practices ☐ Review, update and approve existing national IPC guidance for COVID-19 infection and disseminate to major hospitals and health care facilities. Guidance should include: a) triage, early recognition and source control; b) standard precautions for all patients; c) additional precautions for COVID-19 patients; d) administrative controls; and e) environmental and engineering controls ☐ Train staff of all health facilities on infection prevention and control and develop materials for health care settings ☐ Strictly implement the triage algorithm for all ports of entry, health facilities, RRT and laboratory ☐ Ensure that staff at points of entry (airport and sea ports), health facilities, rapid response teams, laboratory personnel and other frontline staff are trained and equipped with appropriate PPE. ☐ Prepare for surge capacity, including identifying health care facilities, training of additional personnel and emergency medical teams and provision of resources and supplies ☐ Assess IPC practices and compliance in health care settings and other relevant facilities. Address identified gaps. ☐ Develop a waste management plan and ensure supplies are available for managing wastes ☐ Conduct regular simulation exercises to test the IPC practices ☐ Create a culture of practicing basic IPC (e.g., washing hands) in the day-to-day operation of the response teams 6. <i>Non-pharmaceutical public health measures</i> ☐ Develop/agree on protocol for decision-making related to non-pharmaceutical measures, including declaration of State of Emergency, social distancing interventions (work-at-home arrangements, school closure, postponement of festivals, etc) ☐ Ensure that there is a communications plan to announce any non-pharmaceutical interventions

Code	Trigger Scenario	Expected actions
		7. <i>Risk communication and community engagement</i> ☐ Implement a communications campaign focusing on strategies to reduce risk of COVID-19 and other diseases (e.g., hand hygiene, cough etiquette, social distancing and staying home if unwell) ☐ Develop communication products targeting various audiences: public, health workers and facilities, schools, private sector and make them available to provinces and all partners ☐ Develop guidance to support provinces in community engagement and social mobilization that can be used at the community level by the mobilizers and volunteers ☐ Provide communication materials for travellers at points of entry ☐ Proactively inform the public through mass media messaging (and regular media conferences) ☐ Establish systems to collect and respond to public concerns, frequently asked questions, rumours, myths, stigma and misinformation (e.g. media coverage, social media, healthcare work networks). ☐ Identify at-risk communities, their networks, communication channels and potential influencers. ☐ Appoint and train a pool of spokespersons to ensure rapid and coordinated communication to health care workers, stakeholders and the public on health measures ☐ Identify and mobilize partners and stakeholders that can support in risk communication and community engagement (church, schools, private sector, etc) ☐ Coordinate messages and feedback from the telephone hotline ☐ Ensure that communication staff and social mobilizers are trained on IPC procedures and equipment and strictly adhere to those practices. 8. <i>Points of entry (POE)</i> ☐ Enhance border management and health screening at points of entry ☐ Appoint quarantine officers (gazetted) and have a roster of people for POE ☐ Establish triage/isolation area in the POE to screen any suspected case ☐ Work with airlines and shipping companies for on-board awareness prior to arrival in PNG ☐ Establish a system to conduct health assessment, management and transport of ill travellers/staff to previously designated hospitals. ☐ Develop and implement a protocol to coordinate data from POE screening and surveillance system ☐ Provide risk communication messages at points of entry, including information to travellers on potential health risks, preventive measures and when to seek medical care ☐ Ensure that personnel at points of entry are trained on IPC procedures and equipment and strictly adhere to those practices. 9. <i>Operational logistics</i> ☐ Conduct an assessment of needs and gaps for supplies, consumables and PPE ☐ Develop a supplies plan and inventory management tool for preparedness and response ☐ Prepare staff surge capacity and deployment mechanisms. ☐ Map available resources and supply systems in health and other sectors. ☐ Review procurement processes (including importation and customs) for medical and other supplies. ☐ Identify suppliers and assess capacity of suppliers to meet increased demand for supplies. ☐ Review stockpiling, storage, security, transportation and distribution arrangements for medical and other essential supplies. ☐ Prepare supplies and logistics (PPE, pharmaceutical and non-pharmaceutical supplies). Due to increased demand for supplies and logistics globally, anticipate supply chain disruption and consider advance order of the critical pharmaceutical and non- pharmaceutical supplies ☐ Ensure that a contingency plan is in place to address security concerns ☐ Ensure that operations and logistics staff are trained on IPC procedures and equipment and strictly adhere to those practices ☐ Develop contingency plans/SOPs for expediting procurement and other operational logistics to meet demands and urgent timelines 10. <i>Partner coordination</i> ☐ Ensure partners' participation in the preparedness and response either through membership in the Intersectoral Coordination Task Force, clusters and provincial operations ☐ Mobilize development partners and private sector for technical and financial support, including for risk communication and community engagement (church, schools, private sector, etc) ☐ Provide regular updates to partners either through situation reports or briefings and updates. ☐ Advocate for business continuity planning across government agencies ☐ Continue routine health programs such as immunization to reduce the risk of other outbreaks occurring at the same time as a possible COVID-19 outbreak

Code	Trigger Scenario	Expected actions
Orange	Confirmed case of COVID-19 in PNG <i>(At least one case confirmed in PNG)</i>	<u>CONTAINMENT</u> Scale up activities at ALERT PHASE, especially on the following: <i>Incident management and planning</i> ☐ Continue/expand the inter-ministry mechanism for leadership, all-of-government response ☐ Scale-up the work of the Intersectoral Coordination Task Force for COVID-19 for overall response ☐ Continue/scale up the incident management system (IMS), NEOC and PEOC for day-to-day operation ☐ Access funds and resources for all public health measures ☐ Enhance technical and material support to affected provinces ☐ Deploy the trained multi-disciplinary teams to the affected province/s as immediate surge support ☐ Decide on non-pharmaceutical measures, such as declaration of State of Emergency, social distancing (home quarantine, work-at-home arrangements, school closure, postponement of events, establishment of temporary care centers, etc) ☐ Continue to provide regular updates to all partners and stakeholders ☐ Ensure that infection prevention and control (IPC) is implemented in all areas of interventions, and at all phases of the response <i>Surveillance, risk assessment and rapid response</i> ☐ Conduct epidemiological investigation and contact tracing ☐ Quarantine contacts for epidemiological investigation ☐ Further enhance surveillance and rapid response ☐ Further enhance hotline for reporting of suspected cases. Consider surge to manage influx of calls. ☐ Deploy personnel for rapid response and contact tracing, especially to affected provinces ☐ Continue to use existing surveillance systems to collect data (e.g. event-based and indicator-based surveillance for ILI, severe acute respiratory illness (SARI), acute febrile illness, pneumonia) ☐ Supplement surveillance with information from other sources such as work and school absenteeism ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate equipment ☐ Determine criteria for transitioning from containment to mitigation <i>Laboratory</i> ☐ Ensure timely collection of samples and laboratory testing ☐ Ensure sufficient laboratory supplies and consumables ☐ Activate the surge plan to manage increased volume of samples for testing ☐ Strictly adhere to SOPs on sample collection, packing and shipping from provinces to IMR ☐ Strictly follow the SOPs to coordinate and share results (from NDOH to the province, and the individual/family). ☐ Ensure that laboratory personnel strictly adhere to IPC practices and use of appropriate equipment. <i>Clinical management and health care services</i> ☐ Quarantine suspected cases ☐ Ensure the application of the updated WHO clinical management guidelines ☐ Prepare health workers and health facilities for readiness to identify and manage cases, including recognizing signs and symptoms for known complications and administer treatment ☐ Ensure that referral systems for severe cases are in place and implemented ☐ Activate the teams, ambulances and other modes of transport to move suspected and confirmed cases to minimise contact risk, with appropriate PPE ☐ Activate the Emergency Medical Team (EMT) to deploy to affected/vulnerable provinces/areas ☐ Activate the plan to prioritise treatment of severe and high-risk patients in case of code red ☐ Coordinate or join a network of clinical experts to address uncertainties around the clinical management of COVID-19. ☐ Activate protocols to treat and manage potentially infectious patients in primary care settings, non-health facilities and the community. ☐ Prepare the possibility of activating the temporary care centers to manage mild cases ☐ Provide psychosocial support to health staff and patients ☐ Ensure that guidance is made available for home and community care of mild COVID-19 cases, including advice on triage. ☐ Activate business continuity plans to ensure continuation of essential health services. ☐ Ensure provision of health services for people with chronic health conditions such as heart disease, lung disease and diabetes ☐ Consider detailed clinical investigation of early COVID-19 cases

Code	Trigger Scenario	Expected actions
		☐ Ensure that staff strictly adhere to IPC practices and use of appropriate equipment 5. <i>Infection prevention and control</i> ☐ Identify and review capacity of health care facilities to manage and treat increased numbers of patients with suspected COVID-19 infection, including intensive care unit (ICU) capacity. ☐ Deploy trained staff as surge capacity. ☐ Identify alternative facilities that may be used to provide treatment (e.g. community halls, sport facilities). Determine the level of care that can be feasibly and safely provided in each). ☐ Activate triage systems and algorithms to identify priority cases for treatment and ICU admission, ☐ Implement and update national guidance and protocols for clinical management of respiratory illnesses and complications related to COVID-19 infection. ☐ Ensure that IPC guidance is available for home and community care providers. Guidance should reflect locally accessible resources ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate equipment. 6. <i>Non-pharmaceutical health interventions</i> ☐ Decide and implement appropriate public measures regarding mass gathering, social distancing, school closures, work arrangements to be implemented ☐ Involve all of Government response for both pharmaceutical and non-pharmaceutical interventions especially for quarantine measures ☐ Define public health rationale and criteria to deploy non-pharmaceutical public health measure based on risk assessment ☐ Deploy or pre-position supplies and surge personnel to affected health facilities/provinces, including non-pharmaceutical supplies ☐ Mobilize risk communication teams to prepare messages and information materials for affected people, the public and other stakeholders. ☐ Ensure that staff adhere to IPC practices and use of appropriate equipment. 7. <i>Risk communication and community engagement</i> ☐ Facilitate high level announcement of case/s and death/s and to manage people's concerns ☐ Scale up communication and social mobilization to manage fear and anxiety, communicate uncertainty and prevent stigma ☐ Ramp up monitoring of rumors, misinformation, myths and stigma and address them through appropriate channels (social media, hotline calls, community response, etc) ☐ Continue the communications campaign on prevention: hand hygiene, cough etiquette, food safety, social distancing and staying home if unwell. ☐ Regularly update the public with media conferences using the trained spokespersons ☐ Prepare messages and announcements to prepare for the possible shift ☐ Ensure that staff adhere to IPC practices and use of appropriate equipment ☐ Ramp up community engagement for social and behavioural change approaches to ensure community participation in public health measures 8. <i>Points of entry</i> ☐ Ensure implementation of system to conduct health assessment, management and transport of ill travellers/staff to previously designated hospitals. ☐ Provide travellers with information on health risks, prevention and when to seek medical care. ☐ Ensure that personnel at points of entry are trained on IPC procedures and equipment and strictly adhere to those practices. 9. <i>Operational logistics</i> ☐ Deploy supplies and surge personnel to affected health facilities/provinces, including non-pharmaceutical supplies ☐ Continue to identify supplies needs, fill gaps and urgently make additional procurements as needed ☐ Coordinate with relevant agencies to expedite customs clearance of the supplies ☐ Implement contingency plan to address security concerns ☐ Ensure that staff adhere to IPC practices and use of appropriate equipment ☐ Activate contingency plans/ SOPs for expediting procurement and other operational logistics to meet demands and urgent timelines

Code	Trigger Scenario	Expected actions
		10. <i>Partner coordination</i> ☐ Enhance partners' participation in the response ☐ Continue to mobilize partners and private sector for technical and financial support ☐ Provide regular updates to partners either through situation reports or briefings and updates. ☐ Implement business continuity plans across government agencies Prepare the shift to mitigation ☐ Determine criteria and decide to transition from containment to mitigation
Red	Community spread of COVID-19 <i>(Human-to-human transmission in clusters within the community)</i>	<u>MITIGATION</u> Scale up activities at ALERT and CONTAINMENT, especially on the following: 1. <i>Incident management and planning</i> ☐ Continue/expand the inter-ministry high-level leadership, all-of-government response ☐ Further scale-up the work of the Intersectoral Coordination Task Force to oversee the response ☐ Continue/scale up the incident management system (IMS), NEOC and PEOC for day-to-day operation ☐ Access funds and resources for all public health measures ☐ Enhance technical and material support to affected provinces ☐ Deploy more multi-disciplinary teams to vulnerable provinces as surge support ☐ Announce additional non-pharmaceutical measures, such as declaration of State of Emergency, social distancing (home quarantine, work-at-home arrangements, school closure, postponement of events, establishment of temporary care centers, etc) ☐ Ensure that infection IPC is implemented in all areas of interventions, and at all phases of the response ☐ Announce transition from containment to mitigation 2. <i>Surveillance, risk assessment and rapid response</i> ☐ Maintain international reporting to WHO via IHR reporting mechanisms ☐ Monitor the geographical spread of the virus, transmission intensity, disease trends, virological features and impact on health-care services ☐ Update surveillance strategies to actively monitor disease trends and impacts. ☐ Review/update COVID-19 case definitions and disseminate to public health units, health care facilities, surveillance sites, laboratories and points of entry. ☐ Conduct ongoing risk assessments to inform decision and appropriate public health measures ☐ Conduct sampling strategies for virological testing to monitor transmission intensity, in coordination with laboratory and clinical management focal points. ☐ Decide to move away from contact tracing and case identification ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 3. <i>Laboratory</i> ☐ Activate the surge plan to manage increased volume of tests. Reference laboratories may also be overwhelmed by increased testing demands and unable to meet international requests. WHO can provide support to access relevant reference laboratories, protocols, reagents and supplies. ☐ Shift the laboratory strategies to monitor the intensity of transmission ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 4. <i>Clinical management and health care services</i> ☐ Implement protocols to treat and manage potentially infectious patients in primary care settings, non-health facilities and the community. ☐ Activate the plan to prioritise treatment of severe and high-risk patients ☐ Activate surge plan to manage additional demands on staff, facilities and supplies as large increases in the number of COVID-19 cases as well as people presenting with similar symptoms. ☐ Activate (if needed) the temporary care centers to manage mild cases, including pre-triage. ☐ Continue to guide health facilities on how to manage mild cases at home or in the community. ☐ Implement plans to provide business continuity and provision of other essential healthcare services. ☐ Deploy the Emergency Medical Team (EMT) to affected/vulnerable provinces/areas ☐ Provide psychosocial support to health staff, patients, those who recovered and their families ☐ Ensure that national or WHO protocols for the safe collection and transport of respiratory specimens and blood are implemented.

Code	Trigger Scenario	Expected actions
		☐ Regularly update stock management and procurement for medicines, supplies and medical devices needed to provide treatment for COVID-19 patients and to maintain essential health services. ☐ Ensure provision of health services for people with chronic health conditions such as heart disease, lung disease and diabetes. ☐ Consider detailed clinical investigation of early COVID-19 cases. ☐ Ensure that data from health facilities are shared with surveillance and rapid response team for inclusion in the analysis and risk assessment ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 5. <i>Infection prevention and control</i> ☐ Ensure appropriate triage, isolation and transportation systems and resources are in place at health care facilities, such as triage counters before entry to facilities ☐ Use alternative facilities that may be used to provide treatment (e.g. community halls, sport facilities). Determine the level of care that can be feasibly and safely provided in each). ☐ Use the planned triage and algorithm to identify priority cases for treatment and ICU admission ☐ Continue to update and disseminate national guidance and protocols for clinical management of respiratory illnesses and complications related to COVID-19 infection. ☐ Provide IPC guidance for home and community care providers. Guidance should reflect locally accessible resources ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 6. <i>Non-pharmaceutical health interventions</i> ☐ Implement appropriate public measures regarding mass gathering, social distancing, school closures, work arrangements, postponement of events, etc. ☐ Scale up all of Government response for both pharmaceutical and non-pharmaceutical interventions especially for quarantine measures ☐ Ramp up security measures to support the implementation of non-pharma health interventions ☐ Continue to evaluate planned measures for public health benefit versus social and economic cost, taking current risk assessments into account. ☐ Coordinate with risk communication teams to prepare messages and information materials for affected people, the public and other stakeholders. ☐ Establish metrics and monitoring and evaluation systems to assess the effectiveness and impact of planned measures. ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 7. <i>Risk communication and community engagement</i> ☐ Communicate first all public health measures prior to implementation. ☐ Issue regular and updated advice on the public health measures and the shift to mitigation phase ☐ Continue the regular updating to media and the public ☐ Reinforce public communication on prevention messages and what actions people need to make ☐ Ramp up community engagement for social and behavioural change approaches to ensure community participation in public health measures ☐ Proactively address public concerns and manage rumors, misinformation, fear, anxiety and stigma ☐ Provide timely response to public concerns and frequently asked questions ☐ Monitor hotline, social media and other feedback mechanisms ☐ Communicate messages on psychosocial support to health staff, patients, and those who recovered from the disease and their families ☐ Ensure that all communication and community engagement strategies are culturally appropriate ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 8. <i>Points of entry</i> ☐ Decide on the appropriate points of entry strategy -- if transmission has become established in the country, efforts and resources at points of entry could be shifted to supporting surveillance and risk communication activities. ☐ Ensure that staff strictly adhere to IPC practices and use of appropriate PPE 9. <i>Operational logistics</i> ☐ Deploy supplies and logistics (PPE, pharmaceutical and non-pharmaceutical supplies). ☐ Continue to identify supplies needs, fill gaps and urgently make additional procurements as needed ☐ Coordinate with relevant agencies to expedite customs clearance of the supplies

Code	Trigger Scenario	Expected actions
		☐ Implement contingency plan to address security concerns ☐ Ensure that staff adhere to IPC practices and use of appropriate equipment ☐ Activate contingency plans/ SOPs for expediting procurement and other operational logistics to meet demands and urgent timelines 10. <i>Partner coordination</i> ☐ Enhance partners' participation in the response ☐ Continue to mobilize partners and private sector for technical and financial support ☐ Provide regular updates to partners either through situation reports or briefings and updates. ☐ Implement business continuity plans across government agencies
White	Epidemic bought under control globally	<u>RECOVERY AND REVIEW</u> ☐ After action review by an internal and external team of experts for outbreak response ☐ Long term measures for recommending strengthening of country capacities to deal with major outbreaks in the future

PRIORITY AREAS OF THE PLAN

1) INCIDENT MANAGEMENT, PLANNING AND MULTI-SECTORAL COORDINATION

Health emergencies require inter-sectoral and inter-ministry coordination, decision-making and action. As the COVID-19 outbreak could potentially affect the whole of society, various actions will be needed to protect the people and minimize the impact on health and economy and it needs mobilization of relevant Government and non-government agencies. Thus, national public health emergency management mechanisms should be activated to provide coordinated management of the evolving situation.

In PNG, Prime Minister of PNG Hon James Marape appointed the ministries listed below to the Ministerial Committee on Coronavirus to coordinate preparedness. Additional ministries will be added to the committee based on the needs for the response and as per appointment of the Prime Minister.

- ☐ Ministry for Health and HIV/AIDS (Chairperson)
- ☐ Ministry for Foreign Affairs and International Trade
- ☐ Ministry for Information and Communication Technology
- ☐ Ministry for Civil Aviation
- ☐ Ministry for Immigration, Citizenship and Border Security
- ☐ Ministry for State-Owned Enterprises
- ☐ Ministry for Transport and Infrastructure

At the operational level, the NDoH and stakeholders implemented National Executive Council Decision 20/2020 to form the National Intersectoral Coordination Taskforce (NICTF), chaired by the Acting Deputy Secretary for National Health Services Standards to oversee overall implementation of the Emergency Preparedness and Response Plan (ERP) for COVID-19 in PNG. The membership of the Task Force is as follows:

Chairperson: A/Deputy Secretary, National Health Services Standards Dr Sibauk Bieb

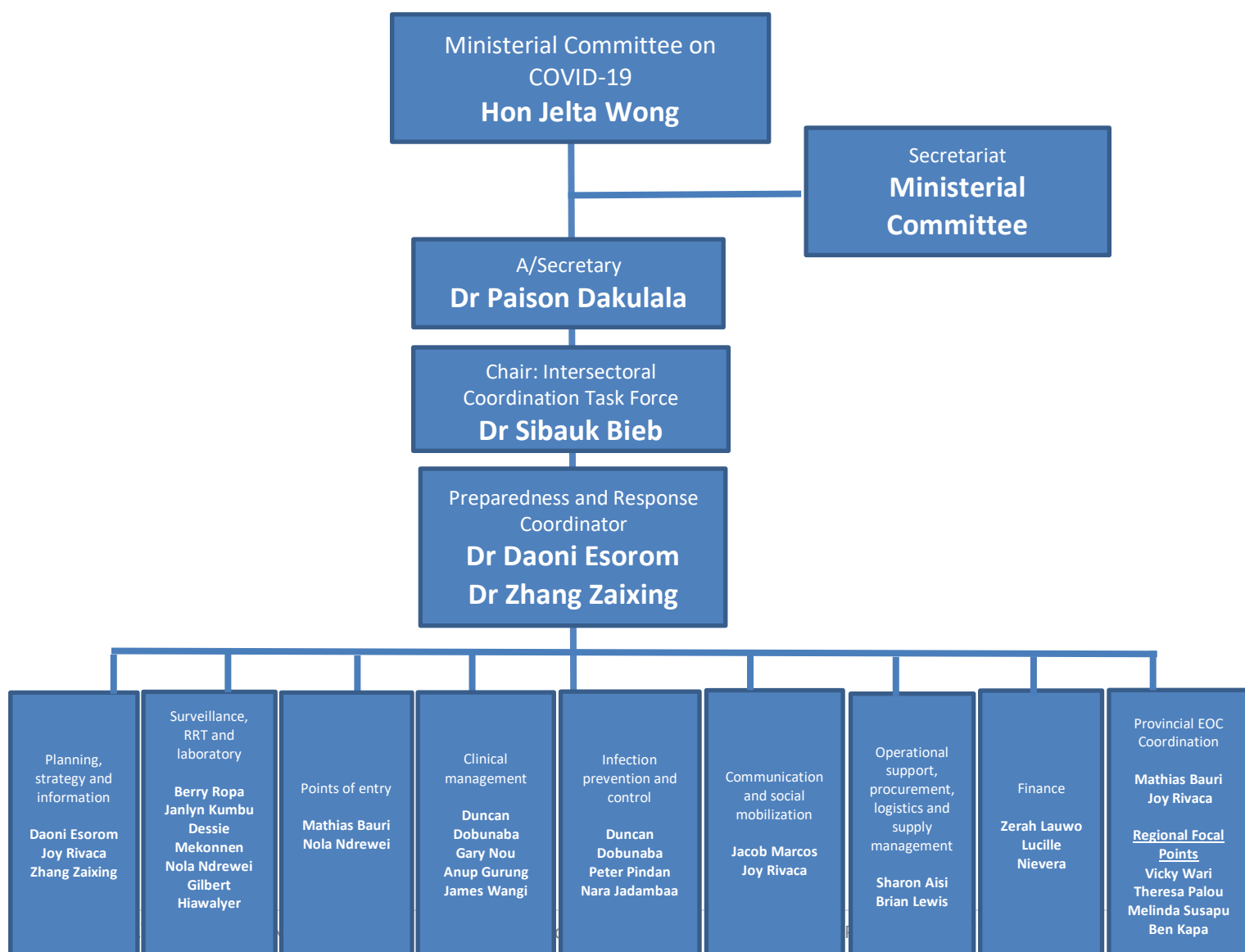
Members:

- ☐ Executive Manager, Medical Standards
- ☐ Executive Manager, Public Health
- ☐ Executive Manager, Strategic Policy
- ☐ Manager, Disease Control
- ☐ Representatives from:
 - Department of Treasury
 - Department of Finance

- ❑ Manager, Health Promotion
- ❑ First Secretary, Ministry of Health and HIV/AIDS
- ❑ Institute of Medical Research
- ❑ Representatives of DPs:
 - World Health Organization (WHO)
 - United Nations Children's Fund (UNICEF)
 - Australian High Commission
 - Ministry of Foreign Affairs and Trade (MFAT), New Zealand
 - Médecins Sans Frontières (MSF)
- ❑ Representatives from all private hospitals and clinics
- Department of Immigration and Citizenship Authority
- Department of Transport and Infrastructure
- National Airports Corporation
- Air Niugini
- PNG Ports
- National Agriculture and Quarantine Inspection Authority (NAQIA)
- PNG Customs Service,
- PNG Tourism Promotion Authority
- Information Communication and Technology,
- PNG Defence Force (PNGDF)
- Royal Papua New Guinea Constabulary (RPNGC)

For the day-to-day operations, the Incident Management System (IMS) applied during the previous health emergencies in PNG is operational. The Emergency Operations Center (EOC) which was established in 2018 has been functional since then, and now used for COVID-19 preparedness since 27 January 2020. The EOC meets daily at 8:30 am and a debriefing is held on ad hoc basis. All 22 provinces of PNG have also activated their Provincial Emergency Operations Centers (PEOCs).

Figure 2: PNG Incident Management System for Coronavirus Disease 2019 (COVID-19)



The PNG Government has provided funds to implement the Emergency Response Plan for COVID-19: PGK 3.3 million from NDOH while the Department of Treasury has approved for release PGK 10 million.

After the declaration in the National Gazette about the risk of an epidemic presented by COVID-19 followed by the WHO declaration of a PHEIC, guided by the Quarantine Act 1953 and the Public Health Act 1973, the following measures were put in place: (1) issuance of the mandatory health declaration form for incoming travellers into PNG; and, (2) appointment of Temporary Quarantine Officers and Temporary Quarantine Stations.

In a scenario of community transmission (code red), an inter-agency multi-sector National Health Security Steering Committee needs to be established to coordinate the overall response, including the non-health interventions.

2) SURVEILLANCE, RISK ASSESSMENT AND RAPID RESPONSE

The objectives of surveillance are to: monitor trends of the disease where human-to-human transmission occurs; rapidly detect new cases in countries where the virus is not circulating; and, provide epidemiological information to conduct risk assessments at the various levels (national, regional and global) and to guide preparedness and response measures.

In PNG, the priority area for surveillance is the active monitoring of disease trends and impacts. This will be done using existing surveillance systems to collect data (e.g. event-based and indicator-based surveillance for influenza-like-illness (ILI), severe acute respiratory illness (SARI), acute febrile illness, pneumonia), which will be supplemented with reports coming through the COVID-19 hotline number: +675 719 60 813. The hotline is activated (since 25 January 2020), with staff on duty 24/7 and monitored daily using call register. Depending on the availability of human resources, surveillance could also be supplemented with ad hoc indicators such as school absenteeism at sentinel sites and sales of over-the-counter medications.

The guidelines for surveillance of human infection with COVID-19 issued and updated by WHO regularly will be used for identification of suspected, probable and confirmed cases (see Box 1). The National IHR Focal Point of PNG will be in coordination with WHO in immediately reporting updates for any reported case. The surveillance team will periodically review and update the COVID-19 case definitions and disseminate to public health units, health care facilities, surveillance sites and laboratories.

There are at least two surveillance officers in each of the 22 provinces who are trained under the Field Epidemiology Training Programme (FETP) that can be activated. The trained rapid response team from the National Capital District can be mobilized to support investigation for arriving passengers and in contact tracing. In case of scale up, an Emergency Medical Team can be mobilized to support for surge capacity.

In a scenario of community transmission (code red), surveillance objectives will shift to monitoring the geographical spread of the virus, transmission intensity, disease trends, virological features and impact on health-care services. A risk assessment has to be conducted using surveillance data and synthesis of information from other sources to inform decision-making and appropriate public health measures.

Box 1. Global surveillance for COVID-19 disease caused by human infection with novel coronavirus (COVID-19)
WHO interim guidance: 27 February 2020

Case Definitions for Surveillance

The case definitions are based on the current information available and will be revised as new information accumulates. Countries may need to adapt case definitions depending on their own epidemiological situation.

Suspect case

- ☐ A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath), **AND** with no other aetiology that fully explains the clinical presentation **AND** a history of travel to or residence in a country/area or territory reporting local transmission (See situation report) of COVID-19 disease during the 14 days prior to symptom onset.
- OR**
- ☐ B. A patient with any acute respiratory illness **AND** having been in contact with a confirmed or probable COVID-19 case (see definition of contact) in the last 14 days prior to onset of symptoms;
- OR**
- ☐ C. A patient with severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath) **AND** requiring hospitalization **AND** with no other aetiology that fully explains the clinical presentation.

Probable case

A suspect case for whom testing for COVID-19 is inconclusive¹.

Confirmed case

A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

Link for lab page: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory-guidance>

3) LABORATORY

Being the only WHO-accredited National Influenza Reference Laboratory in the country and the Pacific, the Papua New Guinea Institute of Medical Research (PNGIMR) is the designated laboratory in the country to test for coronavirus. The PNGIMR Virology Laboratory has a multiplex real-time Reverse-Transcriptase Polymerase Chain Reaction (RT-PCR) for ILIs and respiratory infections including pan-coronavirus assay to test for any suspected COVID-19 case. The diagnostic assay for COVID-19 infection will be set-up with the controls provided from the European Virus Archive.

On the other hand, the Central Public Health Laboratory (CPHL) will pack and ship samples from Central, Gulf and NCD, and manage shipment of samples to international reference laboratory. For initial cases detected, the nasopharyngeal swab will be collected in duplicate with one specimen shipped to Victorian Infectious Diseases Reference Laboratory (VIDRL) in Australia and one specimen shipped to PNGIMR for retesting when the COVID-19 assay is ready.

A surge plan will be developed to manage increased testing volume. There is a need to refine laboratory biosafety protocols and ensure that they are properly implemented. Appropriate biosafety and biosecurity training to staff will be provided.

PNG has staff in all 22 provinces in the country trained and certified by the International Air Transport Association (IATA) to collect, pack and ship laboratory samples. Additional trainings will be made for more certified shippers and surge capacity to ensure that they are familiar with protocols to pack, store and ship specimens, and personal protection from infection during sample collection and according to national regulations. International shipments must comply with international transport regulations and WHO principles for sharing live viruses.

In the event of community transmission **(code red)**, decision will be made on whether to continue testing every single case and advice will be sought from WHO for protocols.

4) CLINICAL MANAGEMENT AND HEALTH SERVICES

The Department will facilitate the rollout of COVID-19 information and guidelines to assist all 22 provinces to prepare. Health care facilities in all 22 provinces are asked to be on alert for large increases in the number of COVID-19 cases as well as people presenting with similar symptoms.

As of 20th February 2020, the global surveillance shows the following:

- ❑ **81%** of confirmed cases were mild
- ❑ **86%** confirmed cases were in people ages 30 to 79 years old, with symptomatic infection in children appearing rare
- ❑ **14%** of the illnesses were severe (i.e. pneumonia + shortness of breath) and about **5%** have critical disease (i.e. respiratory failure, septic shock + multi-organ failure)
- ❑ Overall case fatality rate was **2.3%**
- ❑ Majority of the mortality were in people age 60 and older or those with underlying medical conditions (but not all).

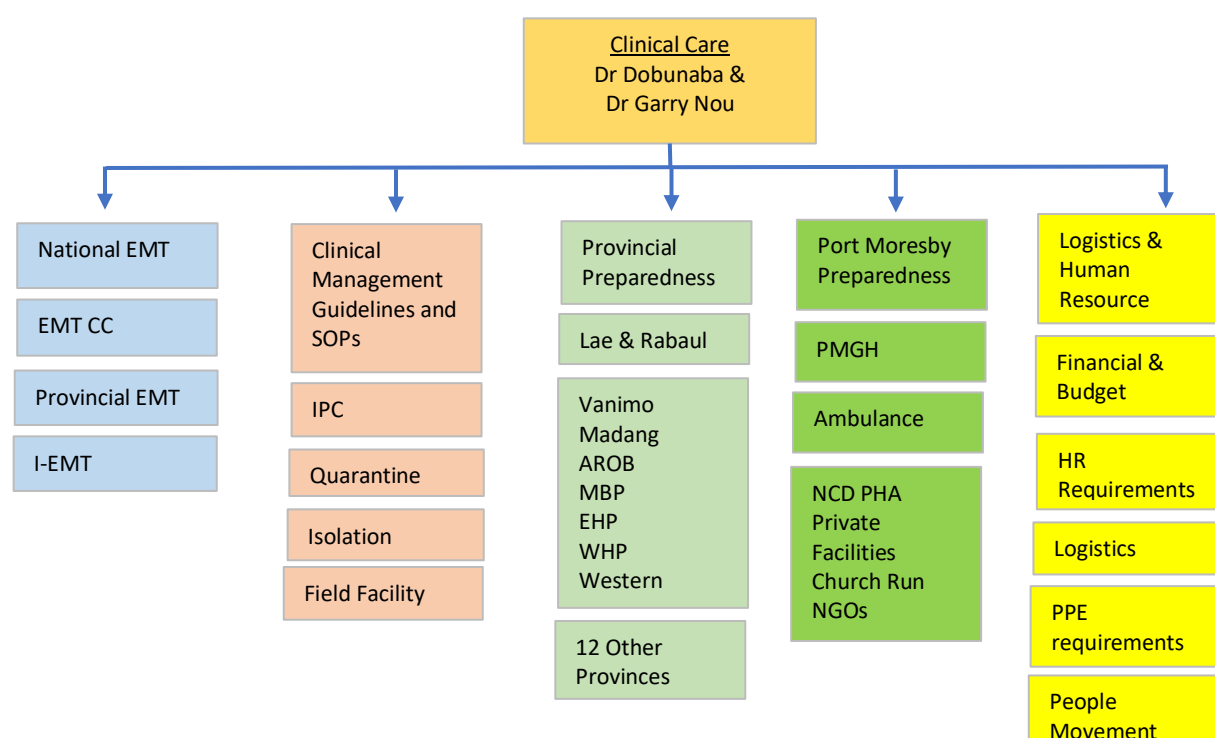
COVID-19 replicates efficiently in the upper respiratory tract (URT), with less abrupt onset of symptoms which is similar to common colds (i.e. dry cough more than productive). Large quantities of the virus can be found in the URT during the prodrome period. Patients are mobile, do usual activities, and spread infection. Furthermore, COVID-19 also has affinity for cells in the lower respiratory tract (LRT) where the virus can replicate. There are radiological evidence of LRT lesions. It has also been confirmed in cases with no clinical pneumonia.

There seem to be three major patterns of the clinical course of infection:

- ❑ mild illness with upper respiratory tract presenting symptoms;
- ❑ non-life-threatening pneumonia, and severe pneumonia with acute respiratory distress syndrome (ARDS) that begins with mild symptoms for 7–8 days; and,
- ❑ rapid deterioration and ARDS requiring advanced life support.

The NDOH is committed to assisting all 22 provinces of Papua New Guinea. The Department has opted to strategize focus on Provinces with Ports of Entry into the country. The key roles in medical response are outlined in Figure 3. Provincial Health Authorities will be guided on the adoption of WHO Guidelines for all aspects of medical preparedness.

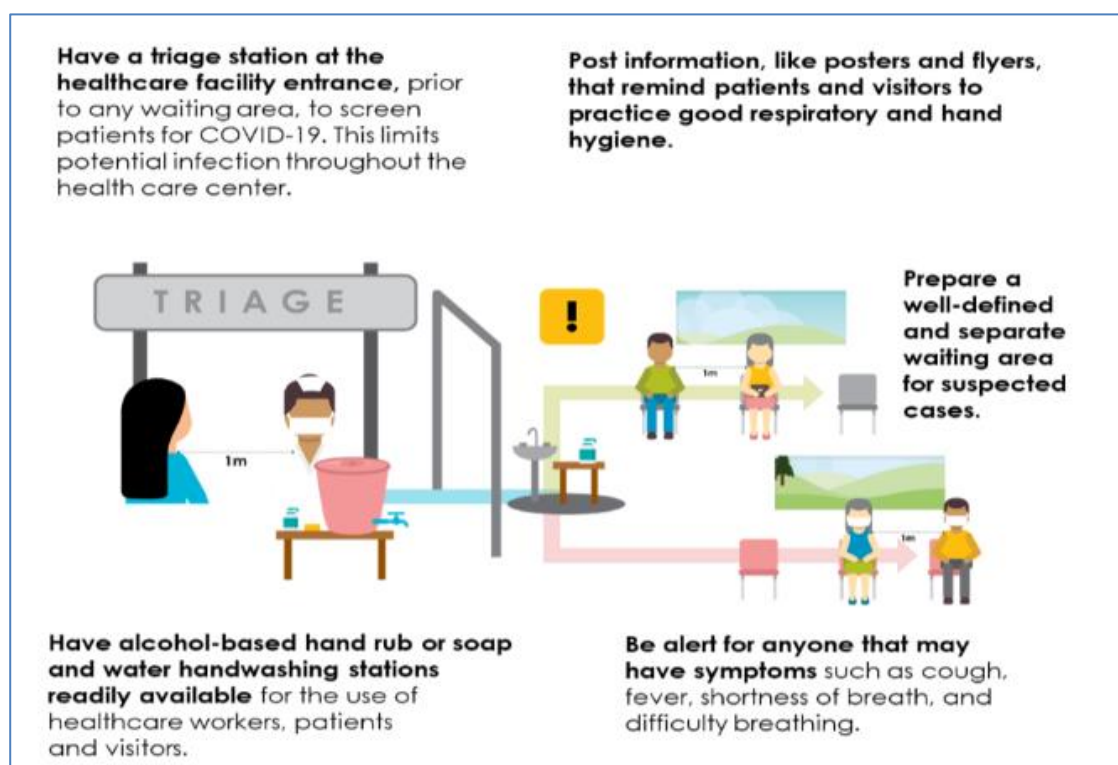
Figure 3: Medical Response for COVID-19



Summary of Key Focus Areas

Provincial planners are to take note of the list.

1. Community Assessment Teams
 - ☐ Green and Orange level response
 - ☐ Assessment of suspect persons identified by the provincial surveillance team
 - ☐ Team is only requested by surveillance team for clinical assessment and decision must be made on disposition either to home quarantine, facility quarantine or if it fits admission criteria then isolation ward in nominated hospital.
 - ☐ Must have appropriate IPC procedures
2. Home Quarantine
 - ☐ Note the progression of disease above
 - ☐ Vigilance and communication with field teams, with early intervention for cases is advised. WHO guidelines are available.
 - ☐ Must have appropriate IPC procedures
3. Facility Quarantine
 - ☐ Provinces must identify an appropriate facility to quarantine persons defined as suspects.
 - ☐ If there is no provincial facility, then implement strict home quarantine procedures.
 - ☐ Guidelines are available.
 - ☐ Facility must have appropriate IPC procedures.
4. Health Facilities Pre-Triage Areas
 - ☐ All health facilities are to implement a safe Pre-triage area called a “Fever Triage”. The area is a sieve for patients attending OPD and Emergency services. The aim is to capture any patients with significant signs and symptoms before entering the facility.
 - ☐ Supportive care must be available.
 - ☐ Must have appropriate IPC procedures

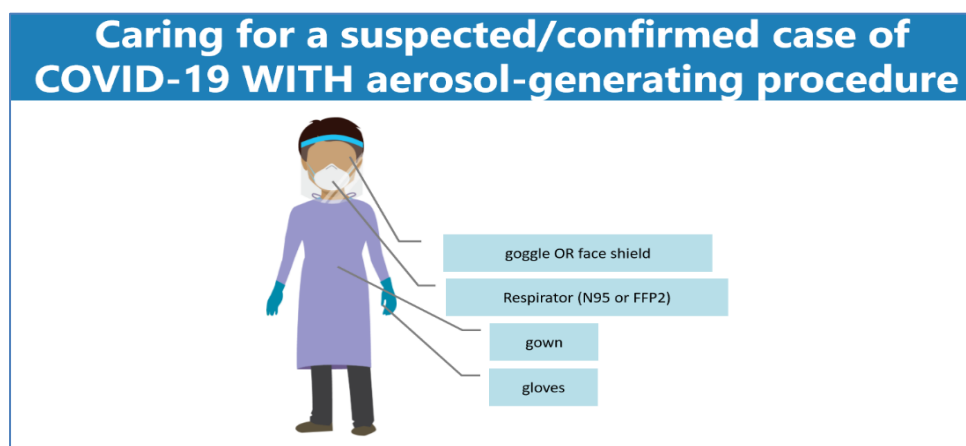


5. Ambulance

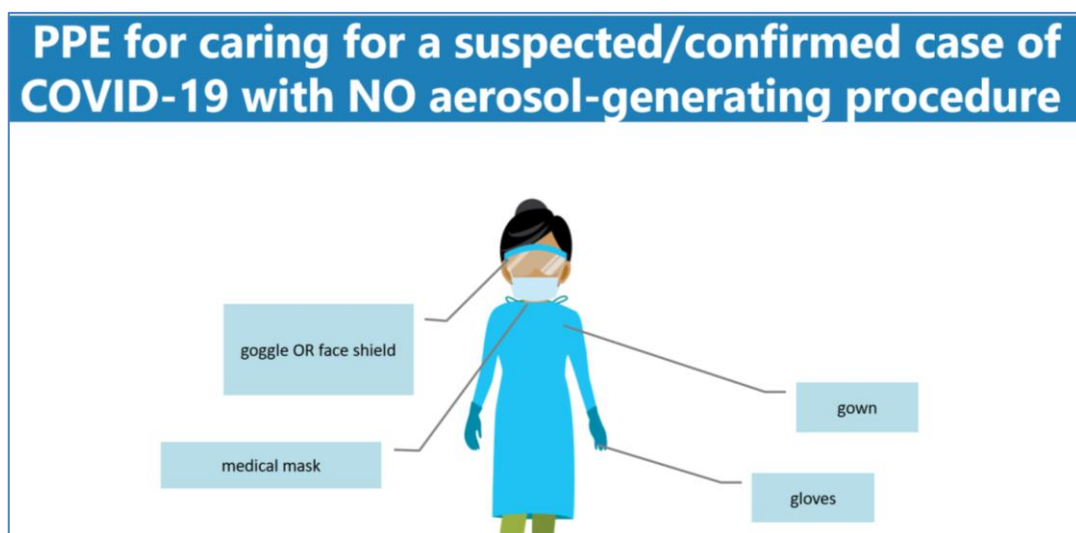
- ☐ There must be a dedicated ambulance and team.
- ☐ They must be trained in PPE and on the right IPC procedures.
- ☐ Decontamination of the ambulance must occur at the Isolation ward.

6. Isolation Ward

- ☐ Designated ward to care for the Severe Acute Respiratory Infection
- ☐ The ward must be well ventilated with appropriate measures for droplet transmission.
- ☐ Must be able to function as a high dependency unit, staffed by appropriately skilled nurses and doctors
- ☐ Must be able to provide for at least two ventilated patients
- ☐ International and National EMT may provide a surge to this facility.
- ☐ Appropriate IPC procedures must apply.
- ☐ Note below PPE for aerosol-generating procedures. Examples are intubation and naso-pharyngeal swab collection.



- ☐ PPE below is for ALL other staff caring for a COVID-19 case in less than 1 meter proximity.



7. Private Health Facilities

- ☐ Private health facilities must be assisted to prepare pre-triage areas.
- ☐ Private Public Partnerships are important as the facilities are a source of surge space and staffing.
- ☐ Must have appropriate IPC procedures

8. Community Care Centres
 - ☐ Field response centres to care for mass patients
 - ☐ Red level contingency
 - ☐ To be assisted by surge staff
 - ☐ Facility is to act as a buffer for main hospitals and clinical care of the lower acuity.
 - ☐ National and International EMT may provide a surge to this facility.
 - ☐ The set-up of an Community Care Center is advised with Triage, Assessment, Treatment and Low Acuity Ward stay.
9. Provincial EMT
 - ☐ Provinces must identify staff and equipment for expansion of services to field facilities.
 - ☐ It is recommended that each province identify 10 staff (nurses or doctors) that can be deployed to National EMT response to affected provinces.
10. National EMT
 - ☐ Surge staffing, skills and equipment for affected provinces
11. Infection Prevention and Control Measures
 - ☐ There will be a national training programme rollout for IPC procedures specifically for droplet infection transmission.

Plans to provide business continuity and provision of other essential healthcare services must be in place. In the event of community transmission (code red), the appropriate non-pharmaceutical public health measures apply. The contingency is the activation of the National Disaster Committee and request for assistance.

5) INFECTION PREVENTION AND CONTROL

Hospitals and health facilities in PNG need to be alerted on infection prevention and control (IPC) practices in facilities, specially to prepare for increased numbers of people infected with COVID-19 and to prevent onward transmission to staff and other patients/visitors. Using guidance from WHO, update existing national IPC guidance for COVID-19 infection and disseminate to major hospitals and health care facilities.

Guidance should include:

- **Triage, early recognition and source control.** Clinical triage including early recognition and source control (isolation of patients with suspected infection) is essential for rapid identification, appropriate isolation and care of patients with suspected COVID-19 infection.
- **Standard precautions for all patients.** Standard precautions include hand and respiratory hygiene; appropriate use of personal protective equipment (PPE); safe waste management; environmental cleaning and sterilization of patient-care equipment and linen.
- **Additional precautions for COVID-19 infection.** In addition to standard precautions, all individuals (healthcare workers, visitors, family members etc) should apply contact and droplet precautions for suspected and confirmed COVID-19 patients. Healthcare workers performing aerosol-generating procedures should also apply airborne precautions.
- **Administrative controls.** Ensure sustainable IPC infrastructure and activities (e.g. IPC committee, review existing PPE stockpiles, estimate future needs, facilitate procurement).
- **Environmental and waste disposal.** Basic infrastructure of health care facilities must be maintained including adequate ventilation, environmental cleaning and disinfection

Assessment of needs and gaps for IPC materials need to be conducted, including procurement of the needed supplies. Stockpile for IPC materials (masks, PPE, water supplies, washing equipment, etc) needs to be checked to correlate with the anticipated needs in hospitals and facilities. Staff at hospitals and health facilities need to be re-trained on IPC measures and provided information and communication materials.

6) NON-PHARMACEUTICAL PUBLIC HEALTH MEASURES

In the event of community transmission (code red), management strategies will largely rely on non-pharmaceutical public health measures to reduce the level of transmission, as there are currently no vaccines or specific therapeutics available for COVID-19.

Based on the surveillance and risk assessment reports, some measures – particularly social distancing interventions – will be carefully evaluated for public health benefit versus social and economic cost. Others such as quarantine of exposed individuals and border closures may be of limited use once widespread transmission has been established and should be evaluated for effectiveness.

Some of these non-pharmaceutical measures include stopping mass gatherings, school closures and cancellations, advice on work schedules and shifts. Protocols need to be established for quarantine of individuals and communities based on existing laws (Quarantine Act), and the mechanism for providing supplies and materials to those communities. This had to be well-coordinated with all relevant agencies.

Any decision to implement a non-pharmaceutical public health measure must also be guided by risk assessments that take into consideration clinical severity, transmissibility and impact of the virus. These kinds of interventions go beyond the health sector and would need high-level decision-making and an “all-government” approach.

In the event of public health measures, coordinated risk communication messaging should be first made to prepare the public, especially advice on home quarantine, school closure and mass gathering cancellations. There is also a need to establish metrics and monitoring and evaluation systems to assess the effectiveness and impact of planned measures and triggers to lift the public health measures.

Some of the non-pharmaceutical public health measures to reduce transmission of COVID-19 are below.

Situation	Intervention
Recommended in all situations	• Hand hygiene • Respiratory etiquette • Face masks for symptomatic individuals • Surface and object cleaning • Voluntary isolation of ill individuals • Health advice for travellers
Consider, based on local evaluation (at code red)	• Avoiding crowding (e.g. mass gatherings) • School closures and other measures¹ • Workplace closures and measures (e.g. teleworking, staggered shifts, enhanced sick leave policies) • Transportation control ¹ School measures include exclusion policies for ill children, increasing desk spacing, reducing mixing between classes, and staggering recesses and lunchbreaks. School closures are suggested during a severe epidemic and should be coordinated and proactive, rather than reactive. ² Workplace measures include teleworking, staggering shifts and expanding policies on sick leave.

In decision-making for the non-pharmaceutical public health measures, the following need to be considered:

- ☐ Define public health rationale and trigger criteria to deploy each planned non-pharmaceutical public health measure.
- ☐ Evaluate planned measures for public health benefit versus social and economic cost, taking current risk assessments into account.
- ☐ Coordinate with risk communication teams to prepare messages and information materials for affected people, the public and other stakeholders.
- ☐ Consider establishing metrics and monitoring and evaluation systems to assess the effectiveness and impact of planned measures.

7) RISK COMMUNICATION and COMMUNITY ENGAGEMENT

Risk communication will focus on reducing risk, managing public anxiety, communicating uncertainty on what is known, what is unknown and what is being done and gaining public trust. In PNG, there is public concern on the readiness of the health system and this needs to be addressed by demonstrating preparedness measures. A system also needs to be in place to proactively correct rumours and misinformation.

A communication plan will be in place based on the scenarios identified (attached as annex). A communications team has to be identified from various agencies to implement the communications plan and proactively develop key messages and other materials to ensure consistent messaging across media platforms.

On the preparedness phase, a nationwide communication campaign needs to be launched to promote prevention messages focusing on hand hygiene, cough etiquette, food safety, social distancing and staying home if unwell. These strategies are aimed to reduce risk of COVID-19 and preventing other infectious diseases. The campaign will use multi-media platforms, such as print, TV, radio, social media and community mobilizers at the provincial levels. Based on the previous polio and measles vaccination campaigns in PNG, health workers were identified as the main source of information therefore talking points and frequently-asked questions will be developed for health care workers.

A hotline number (+675 719 60 813) has been activated since the preparedness phase and will continue throughout the response and recovery. It provides a platform for people to interact and report suspect cases and ask questions. The use of SMS message blasts will be explored with telecommunication companies.

Clearance procedures for messaging need to be streamlined to ensure that responses can be disseminated rapidly. Social media, websites, social networks and feedback from the hotline and the public will be the main mechanism to detect and respond to public concerns, frequently asked questions, rumours and misinformation (e.g. monitoring media coverage, social media, healthcare work networks).

To ensure timely information to the public a regular media conference needs to be scheduled. It could be led by NDOH and in some cases, to be held jointly with other agencies.

A pool of trained spokespersons need to be appointed and available 24/7 to ensure rapid and coordinated communication to health care workers, stakeholders and the public on health measures. These spokespersons can be technical cluster leads and alternates. To streamline processes, spokespersons for key events and announcement can be identified, based on the following;

Key Events	Spokesperson	Mechanism to announce
High-level announcements		
First case of COVID-19 in PNG	By the Health Minister (with WHO Representative)	☐ Media conference and media release ☐ Social media post
First death of COVID-19 in PNG	By the Health Minister (with WHO Representative)	☐ Media conference and media release ☐ Social media post
Confirmation of community spread (code red)	By the Prime Minister, Health Minister, other Ministers (with WHO Representative)	☐ Media conference and media release ☐ Social media post
Any extreme public health measure	By the Prime Minister, Health Minister (with relevant agencies)	☐ Media conference and media release ☐ Social media post
Outbreak updates		
Preparedness measures	By the NDOH Secretary (with WHO Representative)	☐ Social media posts ☐ Media updates and interviews
Update on cases after the first case	By the NDOH Secretary or appointee, (with WHO Representative or appointee)	☐ Social media posts ☐ Media updates and interviews

Key Events	Spokesperson	Mechanism to announce
Update on the deaths of COVID-19 in PNG	By the NDOH Secretary or appointee, (with WHO Representative or appointee)	☐ Social media posts ☐ Media updates and interviews
Update on community spread (code red)	By the NDOH Secretary or appointee, (with WHO Representative or appointee)	☐ Social media posts ☐ Media updates and interviews
Update on extreme measures	By the NDOH Secretary or appointee, (with relevant agencies or appointee)	☐ Social media posts ☐ Media updates and interviews
Technical updates (understanding the disease)		
Any update on the outbreak related to technical issues	Cluster lead/technical person	☐ Media updates and interviews ☐ Talk shows and public affairs programs
Public health advisories	Cluster lead/technical and communications team	☐ Social media posts ☐ Media updates and interviews ☐ Talk shows and public affairs programs
Follow-up actions on the public health measures	Cluster lead/technical and communications team	☐ Media updates and interviews ☐ Talk shows and public affairs programs ☐ Social media posts
Rumor management and myth busting		
Rumor management and addressing myths and misinformation	Communications team	☐ Social media posts ☐ Media updates and interviews ☐ Talk shows and public affairs programs
Social media	Communications team	☐ Social media posts ☐ Media updates and interviews ☐ Talk shows and public affairs programs

To support provinces in case of scale up, the pool of spokespersons mobilized and trained during the polio outbreak and measles campaign can be activated to respond to media questions in the provinces. For community-level engagements and messaging, provinces will be provided information materials that can be printed and distributed locally, especially those related to personal hygiene, cough etiquette and food safety. Social mobilizers and village health workers can be tapped for community-level engagement.

Messages also need to be developed for special audiences, such as travelers, people in isolation or quarantine, persons with special needs as well as for specialized groups such as schools, front line workers (such as police, etc), health facilities and others. Consider messages on mental health and psychosocial support.

As situations evolve, prepare communications to explain changes in response strategy and to set public expectations. Establish systems to collect and respond to public concerns, frequently asked questions, rumours and misinformation (e.g. monitoring media coverage, social media, healthcare work networks).

In the event of community transmission (code red), it should be highlighted that **any public health measure should be communicated first before implementation** to prepare the public and manage expectations, fear and anxiety. Communication will be the first line of intervention prior to any implementation.

8) POINTS OF ENTRY

Screening at points of entry (POEs) is done at the Jacksons International Airport and it is mandatory for arriving passengers to fill out a health declaration form. There is a Health Desk at the airport, managed by health workers who also provide information to inbound passengers, especially the hotline to call if they get sick. Similar measures are in place in three major sea ports.

A temporary isolation room and triage areas for sick patients need to be identified where a sick person can be investigated before transport to PMGH isolation unit for medical observation. The same system will be made at sea ports and land crossings. Case retrieval and containment measures are recommended for anyone who meets the COVID-19 case definitions.

Airline staff and attendants need to be trained in identifying suspected cases, how to isolate inside the aircraft and on reporting. Health workers at the point of entry health desk should be trained for self-protection and use of PPE.

The results of the screening at the point of entry should feed into the surveillance and reporting systems. Health assessment, management and transport of ill travellers/staff to previously designated hospitals must be ensured. Travelers must be provided with information on potential health risks, preventive measures and when to seek medical care.

In the event that transmission of the virus has become established in the country (code red), efforts at POEs could be shifted to supporting surveillance and risk communication activities.

Thermal scanning equipment, thermometers, PPE, communication materials and other materials need to be made available at points of entry. For the long-term, the establishment of a Points of Entry Unit and Isolation Unit in every point of entry need to be prioritized.

9) OPERATIONAL LOGISTICS

Logistic arrangements to support event management and operations should be put in place and key people will be overseeing the procurement and deployment of supplies 24/7. Expedited procedures may be required in key areas (e.g. surge staff deployments, procurement of essential supplies, staff payments).

Priorities would be in preparing staff surge capacity and deployment mechanisms as well as mapping of available resources and supply systems in health and other sectors.

Agreements have to be made with other Government agencies to review procurement processes (including importation and customs) for medical and other essential supplies and what measures needed to expedite these measures. Mechanisms need to be done to review stockpiling, storage, security, transportation and distribution arrangements for medical and other essential supplies.

In the event of community transmission and (code red) is triggered and all of Government approach is announced, the demand for supplies and materials for the communities will be beyond health and other agencies will be mobilized to support this.

10) PARTNER COORDINATION

The preparedness and response plan is led by the National Department of Health, with support from WHO, United Nations Resident Coordinators' Office and other partners. Mechanism are in place for involvement of the Government and private sectors such as the health cluster to ensure multi-sector response

Some of the key agencies involved in the implementation of the plan include the National Airports Corporation (NAC), PNG Immigrations & Citizenship Authority, National Animal Quarantine Inspections Authority, PNG Ports, Provincial Health Authorities, hospitals and health facilities. Other relevant stakeholders will be mobilized for joint implementation of public health, health quarantine and control measures.

A regular situation report (issued every Wednesday) is the mechanism in place to update partners. Invitations were also extended to relevant agencies to join the daily EOC meetings.

In the event of community transmission and (code red) is triggered and all of Government approach is announced, the partner coordination will be broadened to facilitate other non-health interventions especially for quarantine.

RECOVERY PHASE

The shift to recovery phase will be dependent on the global declarations. PNG will decide on specific measures depending on the global advice.

BUDGET AND FINANCING

NO	CLUSTER CATEGORY	BUDGET
1	Clinical Management and Ambulance	PGK 35,000,000.00
2	Incident Management and Planning	PGK 3,588,000.00
3	Operational Logistics	PGK 1,688,800.00
4	Surveillance and Risk Assessment	PGK 3,975,200.00
5	Laboratory	PGK 1,168,989.00
6	Infection Prevention and Control	PGK 1,529,100.00
7	Non-Pharmaceutical Public Health Management	PGK 24,316,800.00
8	Risk Communication	PGK 9,799,100.00
9	Point of Entry	PGK 11,783,600.00
	GRAND TOTAL	PGK 92,849,589.00

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