

DOCUMENTING PROGRESS FOLLOWING THE  
JOINT EXTERNAL EVALUATION (JEE) AND  
IMPLEMENTATION OF THE NATIONAL PLAN FOR  
EMERGING INFECTIOUS DISEASES (EID),  
PUBLIC HEALTH EMERGENCIES (PHE) AND  
HEALTH SECURITY  
IN LAO PEOPLE'S DEMOCRATIC REPUBLIC  
**Mission Report: 04-08 February 2019**



## WHO/WHE/CPI/2019.24

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**Suggested citation.** Documenting Progress following the Joint External Evaluation (JEE) and Implementation of the National Plan for Emerging Infectious Diseases (EID), Public Health Emergencies (PHE) and Health Security in Lao People’s Democratic Republic. Mission Report, Geneva, Switzerland, 4-8 February, 2019. Geneva: World Health Organization; 2018 (WHO/WHE/CPI/2019.22). Licence: CC BY-NC-SA 3.0 IGO).

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

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Printed in Switzerland

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## ACKNOWLEDGEMENTS

The WHO mission team is grateful for the support of the following for this documentation mission:

Ministry of Health staff who shared relevant documents and participated in group discussions for the various focus or technical areas and arranged the debriefing session on 8 February.

Staff from other ministries and agencies who participated in the group discussions related to their specific technical areas.

WHO Country Office for facilitating the various meetings with key informants, providing relevant documents and context for the activities related to the various technical areas.

WHO Regional Office for the Western Pacific for the facilitation of this meeting and for actively supporting this mission.

## Abbreviations

<b>AAR</b>	After Action Review
<b>ADB</b>	Asian Development Bank
<b>AEFI</b>	Adverse Event Following Immunization
<b>AMR</b>	Antimicrobial resistance
<b>APSED III</b>	Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies
<b>DCA</b>	Department of Civil Aviation
<b>DCDC</b>	Department of Communicable Disease Control
<b>EID</b>	Emerging Infectious Disease
<b>EMT</b>	Emergency Medical Team
<b>EOC</b>	Emergency Operations Center
<b>EPI</b>	Expanded Program on Immunization
<b>EQA</b>	External Quality Assurance
<b>EWARN</b>	Early Warning Alert and Response Network
<b>FET</b>	Field epidemiology training
<b>FETP</b>	Field Epidemiology Training Program
<b>FS</b>	Food Safety
<b>GLASS</b>	Global Antimicrobial Resistance Surveillance System
<b>HS</b>	Health Security
<b>JEE</b>	Joint External Evaluation
<b>IAEA</b>	International Atomic Energy Agency
<b>IHR</b>	International Health Regulations
<b>IPC</b>	Infection Prevention and Control
<b>IPL</b>	Institut Pasteur du Laos
<b>LOMWRU</b>	Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MAF</b>	Ministry of Agriculture and Forestry
<b>MOD</b>	Ministry of Defense
<b>MOH</b>	Ministry of Health
<b>MOIC</b>	Ministry of Industry and Commerce
<b>MOST</b>	Ministry of Science and Technology
<b>MOU</b>	Memorandum of Understanding
<b>NAPHS</b>	National Action Plan for Health Security
<b>NCDCC</b>	National Communicable Disease Control Committee
<b>NCLE</b>	National Center for Laboratory and Epidemiology
<b>NDMO</b>	National Disaster Management Office
<b>NIP</b>	National Immunization Program
<b>NLQA</b>	National Laboratory Quality Authority
<b>PHE</b>	Public Health Emergency
<b>PHEIC</b>	Public Health Emergency of International Concern
<b>POE</b>	Point of Entry
<b>SimEx</b>	Simulation Exercises
<b>SOP</b>	Standard Operating Procedure
<b>SPAR</b>	IHR State Party Annual Reporting
<b>WHO</b>	World Health Organization

# Executive summary

## Background

In order to implement the International Health Regulations (IHR) 2005, Member States need to build their capacities to prevent, detect and respond to public health emergencies. An IHR Monitoring and Evaluation Framework consisting of State Party Annual Reports (SPAR), After Action Reviews (AAR), Simulation Exercises (SimEx) and voluntary Joint External Evaluations (JEE) has been developed. The results of these can guide Member States in creating and updating their National Action Plans for Health Security (NAPHS).

Countries in the Asia Pacific region have been utilizing the Asia Pacific Strategy for Emerging Diseases as a common framework for strengthening the core capacities required for IHR 2005 implementation. The latest framework, the Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III), encompasses an all-hazards approach. APSED III focuses on enhancing and sustaining the core public health functions required to sustain and strengthen the entire health system. It also includes linkages to other sectors and health security initiatives needed to prevent, respond to and mitigate the impact of public health emergencies using an all-hazards approach.

Lao PDR has drafted and been implementing a National Work Plan for Emerging Diseases, Public Health Emergencies and Health Security (the National Plan) which is guided by APSED III, to advance the implementation of IHR capacities. The National Plan was updated following recommendations from the JEE in February 2017.

A WHO team visited Lao PDR on 4-9 February 2019 to document the country's progress in implementing the National Plan following the JEE in 2017. The objectives of the mission were:

- To capture the progress made following the JEE recommendations and implementation of the National Plan;
- To identify best practices, challenges and lessons learned for IHR capacity building; and
- To recommend priority areas for further strengthening in Lao PDR.

WHO mission members reviewed evaluation and assessment reports, progress reports and the National Plan. The team met with staff from relevant MOH departments and other ministries and discussed progress, best practices, lessons learned and challenges. A debriefing session was held on 9 February during which preliminary findings and recommendations were shared and feedback obtained.

The following sections describe the team's general findings and recommendations as well as specific findings for individual JEE technical areas arranged by APSED III focus areas.

## Best Practices and Progress in Implementation of the National Plan

### **Among the best practices observed were the following:**

1. Lao PDR is one of few countries that is using all the components of the IHR monitoring and evaluation framework, and other M&E instruments, to inform continuous improvement in health security. Lao PDR conducts a stakeholder meeting annually to review implementation progress and to identify priorities. This provides opportunities to harmonize and align partner support with the implementation of the National Plan.
2. Lao PDR has utilized the APDSED III framework to advance implementation of IHR capacities.
3. The development and approval of various laws/legislation (e.g. communicable diseases control law, immunization law, radiation law) provides the legal framework for implementation of activities in support of the National Plan.
4. The Lao Field Epidemiology Training Program (FETP) continues to enhance the capacities of human and animal health staff for surveillance and response. During public health emergencies, field epidemiology training (FET) alumni are quickly mobilized to respond to public health emergencies.
5. The national IHR focal point (Department of Communicable Disease Control or DCDC) has focal persons who link with other ministries and partners for each focus area. This facilitates communication and collaboration among relevant government and partner agencies.

### **Significant progress was observed in the following areas:**

1. There has been improvement in the conduct of risk assessments of events at the national level. This is due in part to the incorporation of risk assessments into the FET curriculum. FET trainees and staff conduct risk assessments using a standardized algorithm for each public health event.
2. Marked improvement has occurred in the laboratory system, especially with regard to the proper collection, packaging and timely transport of specimens from sub-national levels to national laboratories.
3. Sub-national assessments of infection prevention and control (IPC) capacities at provincial and district levels were conducted (13 provincial and 40 district hospitals in 2018 and January 2019). The results are being used to strengthen capacities.
4. Communication regarding immunization has improved in hard to reach areas. Key messages have been translated to local dialects/languages.
5. The country has established a dedicated radio-nuclear and safety unit in the Ministry of Science and Technology (MOST) and there has been improvement in enabling factors (e.g. radiation law, acquisition of equipment, training of staff) for the detection of radiation-related events.

## Challenges

**The following challenges need to be addressed in order to continue building the country's capacities:**

1. Clear lines of authority, a mechanism to coordinate, and linkages between the different emergency operation centers (EOCs) are needed. This is particularly important for ensuring effective and timely responses to all-hazard events.
2. There are significant skilled workforce limitations, which could be exacerbated by impending health staff retirements. This necessitates mapping of the required skill sets (such as epidemiology, risk communication, laboratory, logistics, etc.) to inform the human resource development plans for both the human and veterinary health sectors.
3. Sustainability of programs and focus areas remains a challenge as many of the programs are substantially supported by external funding.
4. Implementation of laws and regulations requires the development of policies, and administrative requirements, which may further delay the implementation of some of the focus areas of the National Plan.
5. With the decentralization of health services, there is a need for sub-national capacities to prevent, detect and respond to public health threats and events. Currently, there are limited and variable capacities across the different provinces and districts.

## Recommendations for Way Forward

**To continue making progress in building capacity and operational readiness for responding to public health emergencies, the team recommends the following actions:**

1. Continue using M&E instruments to make informed decisions and update plans (such as the National Plan, pandemic preparedness plan, etc.).
2. Demonstrate the outcomes and impact associated with investment in the National Plan to the Ministry of Finance and other higher authorities to facilitate securing sustainable domestic financing.
3. Establish a clear line of authority, coordination mechanism and linkages between all Health EOCs (whether these EOCs are existing or under development) for all hazards, and with the EOC of the National Disaster Management Office (NDMO).
4. Map the required skill sets for all the focus areas of the National Plan. This can help to better identify current gaps and future needs. Human resource development plans can then be updated accordingly and aligned with the 'roadmap for attainment of the human resource for health (HRH) reform strategy by 2030'.
5. Sub-national level operational planning is required to ensure the implementation of the National Plan at all levels.
6. Align and prioritize the recommendations of the after-action review of the response to flooding in Attapeu in 2018 in the National Plan.
7. Focus areas should address the specific recommendations for their respective technical areas.



## Progress status, challenges and way forward

### APSED Focus Area 1: Public Health Emergency Preparedness

National legislation, policy and financing and IHR coordination, communication and advocacy			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Establish policy and legislation that is aligned with surveillance, risk assessment and response activities and guidelines are available to ensure timely detection and response to all EID/PHE threats</p> <p>Sufficient human resource, infrastructure, material and supply, and finance are available to support priority surveillance and response activities</p>	<p>Communicable Disease Law was passed. It includes provisions related to IHR articles 31 and 32 (entry and treatment of travelers).</p> <p>Agreement for a new National Communicable Disease Control Committee (NCDCC) chaired by the Minister of Health was signed in December 2018.</p> <p>A decree on the National IHR Focal Point was updated and SOPs developed for the implementation of IHR.</p> <p>The national EID, PHE &amp; HS plan is in place and regularly updated.</p> <p>National IHR focal point, DCDC, has focal persons for each focus or technical area to facilitate implementation of the plan. There is improved national level coordination for preparedness and response.</p> <p>There is good exchange of information between the national IHR focal point (DCDC) and WHO country office.</p> <p>Simulation exercises are done every year.</p> <p>Emergency funds are available in the national budget and can be utilized for response during emergencies, e.g. flooding in Attapeu in 2018.</p>	<p>Implementation of laws and regulations requires the development of policies, administrative requirements and strategic planning (Process), which may further delay the implementation of some of the focus areas of the National Plan.</p> <p>Limited coordination exists across sectors at sub-national levels.</p> <p>Sustainability of programs and focus areas remains a challenge as many of the programs are substantially supported by external funding.</p>	<p>Develop a mechanism to implement the laws.</p> <p>Improve information sharing between sectors and partners.</p> <p>Strengthen sub-national level coordination for preparedness and response. Following activation of the new NCDCC at national level, set up similar interagency committees at sub-national levels.</p> <p>Demonstrate the outcomes and impact associated with investment in the plan to the Ministry of Finance to secure sustainable domestic financing.</p>

	<p>Asian Development Bank (ADB) is funding a five-year health security project which aims to improve capacity in the following areas: health care risk management, IHR implementation, surveillance and response, laboratory quality improvement. Other partners like WHO and USCDC also provide support for IHR implementation.</p>		
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**Preparedness, Emergency response operations including Medical countermeasures and personnel deployment and Linking public health and security authorities**

National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Preparedness and planning for EID/PHE in place by implementing the National Plan;</p> <p>Strong command and coordination system in place for EID and PHE response;</p> <p>PHE response guided by appropriate policy, plan, guidelines, and SOPs;</p> <p>Ensure preparedness for EID and PHE response through capacity building of health and non-health sectors;</p>	<p>Joint preparedness contingency plan for avian influenza is in place and distributed.</p> <p>An all-hazards Strategic Risk Assessment (STAR) involving multiple sectors was conducted in 2017.</p> <p>Interagency contingency plan was revised.</p> <p>Establishment of a national public health EOC at DCDC is ongoing (the EOC is expected to be functional by the end of 2019). EOC guidelines and SOPs are being drafted.</p> <p>Logistic unit within MOH is established with a database for monitoring the supplies (M-supply). Stockpiling and distribution plan is in place for routine activities with national and regional warehouses.</p>	<p>There is unclear delineation of lines of authority, roles and responsibilities of staff and linkages between EOCs.</p> <p>Emergency response coordination at the sub-national level needs improvement.</p> <p>There is a need to build the competencies of designated EOC staff.</p> <p>Stockpiling and distribution plan of logistics for emergency response is not in place.</p> <p>Surge capacity plan for emergency response is not in place.</p>	<p>Consider developing all-hazard emergency preparedness and response plan.</p> <p>Ensure that the EOC being established at DCDC is for all-hazard events.</p> <p>Establish linkages with clear lines of authority between the national public health EOC at DCDC, Cabinet and sub-national EOCs at provincial level and the EOC of the NDMO.</p> <p>Establish the incident management system and structure.</p> <p>Conduct a prioritization of communicable disease threats.</p>

<p>Functional logistic system in place to support preparedness, coordination and response</p>	<p>Both the Ministry of Defense (MOD) and Ministry for Public Security are represented in the NCDCC. MOH has a memorandum of understanding with MOD. There is good coordination between health and security personnel.</p> <p>Simulation exercises are conducted regularly.</p> <p>AAR of response to flooding in Attapeu conducted in 2018.</p> <p>National Emergency Management Teams (EMTs) oriented.</p> <p>Risk assessments of events are regularly conducted.</p>		<p>Organize scenario-based simulation exercises with involvement of sub-national staff. Implement the recommendations from the AAR of the response to flooding event in Attapeu.</p> <p>Develop guidelines for national and international EMTs and develop the surge capacity mobilization plan.</p> <p>Once the guidelines for national EMTs are finalized, designate staff who can function as national EMTs and train them on the new guidelines.</p>
<p><b>Case management</b></p>			
<p><b>National Plan Goal</b></p>	<p><b>Progress since February 2017</b></p>	<p><b>Challenges</b></p>	<p><b>Recommendations</b></p>
<p>Strengthen capacity at all levels to provide better clinical care during EID outbreaks and public health emergencies</p>	<p>Development of clinical management guidelines and SOPs for some of the EIDs and other hazards.</p> <p>Case management experts are trained abroad.</p> <p>There is a mechanism to build capacity of clinicians to manage notifiable diseases, VPDs, etc.</p>	<p>No specific clinical management program is in place.</p> <p>Limitation exists in infrastructure and equipment required for the clinical management of patients in accordance with guidelines.</p>	<p>Develop a training package to disseminate these guidelines and SOPS (consider in-service training).</p> <p>Conduct a needs assessment of infrastructure requirements for the referral centers (national and regional).</p> <p>Prioritize hospitals to strengthen their capacities as referral centers.</p>

	Needs assessment for the infrastructure for ICUs and ERs has been conducted.		
<b>Points of Entry</b>			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
Designated Point of Entry able to detect and respond to public health events	<p>Memorandum of Understanding (MOU) between DCDC of MOH and the Department of Civil Aviation (DCA) exists.</p> <p>Point of entry (PoE) work plan and guiding materials were revised.</p> <p>There is a plan in place for transfer of ill passengers from the airport to a hospital in the capital Vientiane.</p> <p>Health staff from a district health office are stationed at the airport.</p> <p>Animal quarantine facility is available.</p>	<p>Routine measures are not conducted at the POE.</p> <p>There is a need to strengthen the competencies of district health staff stationed at the airport and they should be equipped with necessary medical supplies and equipment.</p> <p>Airport staff lack awareness of their roles and responsibilities under the IHR.</p> <p>Although an emergency response plan for security at the airport exists, airport staff are not familiar with the SOPs for public health emergencies.</p>	<p>Establish routine measures, e.g. vector control, at the designated POE (Wattay International Airport).</p> <p>Conduct simulation exercises of a health emergency in the airport to test the contingency plan.</p> <p>Continue collaboration between MOH and airport authorities.</p> <p>Develop a mechanism to strengthen capacities of airport staff regarding the IHR and required capacities at POEs.</p>

Chemical Events and Radiation Emergencies			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>The plan has linked with the JEE recommendations for chemical events and radiation emergencies. (recommendations for both are similar)</p> <ul style="list-style-type: none"> <li>Conduct a national hazard inventory and relevant resource mapping as part of a national risk assessment and develop appropriate chemical event/radiological emergency response plans as part of an integrated national all-hazards response plan</li> <li>Document sectoral roles and responsibilities for chemical/radiological regulation, event surveillance, reporting and response under the coordination of the NCCDC</li> <li>Consider designating the national EOC as the focal point for data gathering, analysis, event reporting and response management of all national-level chemical/radiological events.</li> <li>Develop case management guidelines for relevant</li> </ul>	<p>There is legislation in place on chemical law that includes an agreement on the list of industrial chemicals.</p> <p>Lists of chemicals are available at the Ministry of Industry and Commerce (MOIC) and MOD.</p> <p>MOD staff have responded to chemical threats, including transport of hazardous waste from the community to military compounds.</p> <p>A national radiation law was passed in December 2018 and will be promulgated in 2019. Upon promulgation of the law, multi-sector national and technical coordinating committees for radiation and nuclear safety will be created.</p> <p>A registry of radiation sources in the country is available at the Ministry of Science and Technology (MOST). Equipment for radiation detection is also available.</p> <p>Response plans for chemical-related and radiation emergencies are under development.</p> <p>There is a dedicated unit at the MOST dealing with radio-nuclear safety, i.e. Radiation and Nuclear Safety Division. The unit has been receiving technical support from the International Atomic Energy Agency (IAEA).</p>	<p>Lack of case management guidelines exist for chemical events and radiation emergencies.</p> <p>No national poison center exists in Lao PDR.</p> <p>Chemical risk profile for the country is not available.</p> <p>There is a lack of simulation exercises for chemical events and radiation emergencies.</p> <p>Need exists for proper disposal of hazardous chemical wastes.</p>	<p>Develop and disseminate case management guidelines for priority chemical events and radiation emergencies.</p> <p>Establish a national poison center or a referral mechanism.</p> <p>Consider designating at least one national level hospital as a referral center for management of chemical or radiation related cases.</p> <p>Conduct risk profiling of chemicals.</p> <p>Improve chemical and radioactive waste management.</p> <p>Develop and conduct simulation exercises for chemical events and radiation emergencies.</p>

<p>chemical/radiological threats within the country</p> <ul style="list-style-type: none"> <li>• Expand the capacity of laboratories (human, animal, environmental and food safety) to analyze priority chemical threats. Define the roles and responsibilities of laboratories assigned to conduct such chemical analyses and develop procedures for appropriate referral of samples to international laboratories as needed.</li> <li>• Establish a national training program for basic radio-nuclear safety and security practices for hospitals (addressing clinical radiation sources) for clinical management of radiation exposure cases, for rapid response team activities in a radio-nuclear emergency, and for appropriate integration of law enforcement and security sector activities into radiation emergency response.</li> </ul>	<p>An ongoing project, TC-LAO2017001, is focused on developing the national infrastructure for radiation safety.</p>		
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Food Safety			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Safe food is provided to the public through implementing food safety (FS) regulations, guidelines and standards to protect health of consumers and establish clear role and responsibilities of regulatory authorities and other key players along the food supply chain;</p> <p>FS risk and events are detected and responded in a timely manner by strengthening foodborne disease surveillance and food monitoring systems;</p> <p>FS risks are reduced through implementation of FS regulations and standards which are enforced through risk-based inspection, monitoring and evaluation;</p> <p>Strengthened capacity of food inspectors and FS surveillance system and increased public awareness on FS.</p>	<p>A food safety policy has been drafted.</p> <p>Various regulations have been drafted or developed (food import/export, drinking water, etc.)</p> <p>Various guidelines have been developed or drafted (food safety, food registration, food standards).</p> <p>A project on food chain safety system is being implemented by the Ministry of Agriculture and Forestry (MAF).</p> <p>Food safety monitoring and surveillance:</p> <ul style="list-style-type: none"> <li>- there have been improvements in inspections of food establishments and markets.</li> <li>- Inspection training conducted in southern and northern regions.</li> <li>- In-service training is in place, with regular participation of staff.</li> </ul> <p>Regular outbreak investigations are conducted on foodborne related events.</p> <p>Pesticide residue lab is established.</p>	<p>There is limited local capacity for testing of food samples (specifically, toxicology, chemical and microbiological).</p> <p>Entry of contaminated food items is a risk especially in border areas.</p> <p>Limited information exists on risk, surveillance, etc. (farm to fork chain of information is missing).</p>	<p>Finalize the food safety policy, which should address all parts of the “farm to fork” chain. This should spell out the roles of various agencies and the principles for national food control.</p> <p>Strengthen the collaboration mechanism among various agencies and departments across ministries, e.g. MOH, MAF.</p> <p>Continue capacity building of food inspectors.</p> <p>Strengthen laboratory capacity for testing of food samples.</p> <p>Consider fast tracking implementation of guidelines and SOPs.</p> <p>Strengthen inspections at border checkpoints.</p> <p>Develop a mechanism of information management for food safety (collection, analysis and dissemination).</p>

## APSED Focus Area 2: Surveillance, Risk Assessment and Response

Surveillance, reporting and workforce development			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Lao PDR has the capacity to detect and notify a potential PHEIC to WHO in a timely manner.</p> <p>Enhance EBS to better detect and respond to EID/PHE threats and strengthen integration with IBS;</p> <p>Strengthen IBS to better detect and respond to EID/PHE threats and adapted to respond to different outbreak situations;</p> <p>Identify EID/PHE threats of national and international concern through systematic risk assessment at central and provincial levels;</p> <p>Increased capacity for initial assessment of events with rapid response teams available at all levels to respond to all hazard events;</p>	<p>Lao has functional IBS and EBS systems, which comprise the Lao EWARN. Some private and military hospitals are part of the system.</p> <p>Data on notifiable diseases and syndromes are transmitted from provincial offices to NCLE on a weekly basis. These are then analyzed by NCLE staff using alert thresholds. Urgent events are immediately communicated by sub-national staff to the NCLE hotline by phone. Surveillance reports are regularly shared with MOH and other partners on a timely basis.</p> <p>NCLE has piloted the inclusion of private health facilities in Vientiane capital in their surveillance. A surveillance module of DHIS2 is being piloted.</p> <p>A risk assessment module has been included in the FET. FET trainees and graduates are doing more risk assessments of events. These risk assessments inform response plans.</p> <p>Consultations with WHO are done even before formal reports are officially submitted.</p> <p>The FET continues to train both human and animal health staff.</p> <p>There are now FET graduates in all provinces and some districts. FET alumni provide surge capacity</p>	<p>Limited human resource capacity exists, especially at the sub-national level.</p> <p>IT capabilities and infrastructure requirements for the DHIS2 need to be addressed.</p> <p>Sharing of cross-border surveillance information is not routinely done.</p> <p>Animal surveillance reports are not shared with human health counterparts on a regular and timely basis.</p> <p>A similar vertical structure as that for human health which links health staff from community, district, province and national levels does not exist for the animal sector.</p>	<p>Conduct an evaluation of the Early Warning and Response system (Lao EWARN).</p> <p>Update surveillance guidelines based on the results of the evaluation and need for enhanced surveillance of vaccine preventable diseases, especially those targeted for elimination.</p> <p>Provide information technology support for real-time surveillance.</p> <p>Roll out the use of DHIS2 for surveillance.</p> <p>Establish a mechanism to improve information sharing of cross-border surveillance.</p> <p>Strengthen risk assessment capacity of staff at sub-national levels.</p>



<p>Build sustainable workforce and surge capacity through Field Epidemiology Training (FET) to prepare for, detect and respond to EID/PHE in Lao PDR.</p>	<p>for outbreak investigations and emergency response. A short course has been developed for district health staff and courses are conducted from time to time when resources are available.</p>	<p>Sustainability of FET funding is an issue.</p>	<p>Include FET in the MOH human resource development plan.  Continue training of district Rapid Response Teams.</p>
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### APSED Focus Area 3: Laboratories

National laboratory system			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Improve and strengthen the administrative and management structure of the Health Laboratories;</p> <p>Strengthen human resource capacity development to support quality diagnostic laboratory services for EID/PHE events;</p> <p>Establish and strengthen structured laboratory quality management systems to promote accurate, timely and reliable laboratory services;</p> <p>Strengthen laboratory capacity to support routine surveillance of notifiable diseases and identification of etiological agents during disease outbreaks;</p> <p>Establish, maintain and expand collaborative links between diagnostic laboratories to support testing of referral samples;</p> <p>Adequate financial resources to sustain quality laboratory services countrywide.</p>	<p>A functional national laboratory committee with designated working group meets regularly.</p> <p>Significant improvement has been made in the collection, packaging and transport of specimens from sub-national to national levels.</p> <p>National laboratory quality standards were finalized in 2018 and have been printed for dissemination.</p> <p>A National Laboratory Quality Authority (NLQA) has been established with terms of reference.</p> <p>National EQA programs (NEQA) have been maintained.</p> <p>A mechanism is in place to strengthen HR capacity for laboratory (pre-service education and training, continued professional development and training plan in place).</p> <p>Laboratory capacity is supporting disease surveillance.</p>	<p>No public health laboratory is currently ISO certified.</p> <p>There is limited skilled laboratory staff, forcing staff to multi-task.</p>	<p>Develop guidelines for local packaging and transport of samples within the country.</p> <p>Disseminate the national laboratory standards to national and provincial laboratories. Consider inviting laboratory representatives to a national meeting during which the standards are explained. Following this meeting, conduct an assessment of compliance of laboratories to the national standard.</p> <p>Strengthen and implement mechanisms for laboratory quality assurance.</p> <p>Continue working for ISO certification of the NCLE laboratory and assist other labs to meet the national laboratory standards.</p>

	<p>Influenza bulletin and epidemiological data is shared on a weekly basis.</p> <p>There is very good collaboration between NCLE, IPL, LOMWRU, WHO and other partners to support rapid response to outbreaks through quick identification of pathogens.</p> <p>A mechanism is in place to coordinate international support to laboratories (technical and financial).</p>		<p>Develop and implement TORs for all reference laboratories (human, animal, food, environment/chemical).</p>
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Biosafety and biosecurity			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Promote the safety of healthcare and support staff and the public at health care facilities by establishing and implementing regulatory structures, guidelines and programs to promote appropriate laboratory bio-safety practices and waste disposal.</p>	<p>A national biosafety and biosecurity authority has been established with TORs and meetings are conducted every year.</p> <p>Biosafety regulation has been drafted and is awaiting approval.</p> <p>A national biosafety manual for the laboratory has been developed.</p> <p>There is ongoing program for certification of Biosafety Cabinets.</p> <p>Training materials and monitoring checklists are available for laboratory staff. Regional trainings on biosafety, biosecurity and risk assessment have been conducted</p>	<p>Biosafety and biosecurity infrastructure in some laboratories is not up to standards. Even if staff have been trained, they are not able to implement some of the measures taught.</p> <p>Laboratory biosafety officers lack the authority to enforce implementation of biosafety and biosecurity measures in their laboratories.</p> <p>There are no measures in place to control the risks from handling of dangerous</p>	<p>Develop a mechanism to strengthen infrastructure of laboratories to comply with the standards.</p> <p>Consider establishing a national regulatory body for biosafety and biosecurity.</p> <p>Train more biosafety and biosecurity officers.</p> <p>Map dangerous pathogens in 2019. Develop a national inventory of dangerous pathogens across all human and animal health laboratories.</p>

	<p>for staff from all provincial and military hospitals.</p> <p>Provincial biosafety officers have used the biosafety and security risk assessment tool to assess the situation in their respective laboratories and developed workplans based on their assessment.</p>	<p>pathogens and toxins in public human and animal laboratories.</p> <p>Some provincial laboratories have not used the biosafety and security risk assessment results to inform their workplan to improve their laboratory.</p> <p>Occupational health services are only available for laboratories supported by international partners with limited services available for staff in government-run laboratories.</p>	<p>Empower trained biosafety officers to guide and implement biosafety activities in the laboratory.</p> <p>Encourage laboratories to use the risk assessment findings to strengthen their laboratory's capacity by incorporating improvements to their biosafety and biosecurity situation in their laboratory workplans. Monitor progress on a regular basis.</p> <p>Provide and assess the quality of occupational health services for laboratory staff in government laboratories.</p> <p>Include the need for laboratory biosafety officers in the MOH human resource development plan.</p>
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## APSED Focus Area 4: Zoonoses

Zoonotic diseases			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Detect and respond to zoonotic events of national or international concern through regular sharing of surveillance information between human and animal sectors;</p> <p>Coordination mechanism with trained joint RRT in place for joint response to zoonotic events of national concern;</p> <p>Implement sustainable risk reduction activities for priority zoonotic diseases using risk reduction measures;</p> <p>Generate knowledge base for evidence-based decision making in Lao PDR relating to zoonotic diseases.</p>	<p>There is improved communication between animal and human health staff (review of existing MOUs, TORs for technical working group, contact list available). During outbreaks of zoonotic diseases animal and human health investigations are coordinated.</p> <p>Slots continue to be provided for animal health staff to participate in the FET based at the MOH.</p> <p>Village animal health volunteers have been trained on reporting of events to district offices. There has been ad hoc event-based reporting by these volunteers. Trainings were conducted on animal sample collection and testing.</p> <p>Sentinel surveillance sites for AI have been established in 5 sites.</p> <p>Research studies were conducted on preparedness and response to priority diseases between MOH and MAF.</p>	<p>There are a limited number of skilled veterinary staff in the government sector.</p> <p>The quality of reporting across districts and provinces is variable.</p> <p>There is a lack of formal or structured mechanisms for ongoing inter-agency information exchange and collaboration.</p>	<p>Create a formal structure for inter-agency information sharing and collaboration for zoonotic diseases. An MOU among the ministries involved that includes clear lines and delegation of authority for various functions should be finalized as soon as possible.</p> <p>Continue capacity building of animal and human health staff for zoonoses. Short courses could be developed for sub-national staff.</p> <p>Review the existing contingency plans for AI.</p> <p>Develop a One Health strategy and a mechanism to implement it.</p> <p>Strengthen animal health surveillance systems.</p> <p>Continue improving the capacity of the National Animal Health Laboratory for conducting tests for priority zoonoses.</p>

## APSED Focus Area 5: Prevention through Health Care

Antimicrobial resistance (AMR) including infection prevention and control (IPC)			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Ensure sustainable implementation of the national AMR action plan including appropriate resource allocation and enforcement of relevant legislation;</p> <p>Improve awareness and understanding of AMR through effective communication, education and training;</p> <p>Establish AMR surveillance in public health-care facilities and, where possible, in the private sector;</p> <p>Improve access to, and use of, AMR surveillance data, including alerts on the identification of newly emerging resistance patterns among humans and animals;</p> <p>Support regional and international efforts to reduce the impact of AMR on individuals and communities by maintaining and strengthening the focus on tuberculosis, malaria and other AMR organisms;</p> <p>Strengthen lab capacity to conduct antimicrobial sensitivity testing and timely reporting of priority AMR pathogens as part of EBS;</p> <p>Optimize the use of antimicrobials in human and animal health.</p>	<p>AMR committee was established.</p> <p>The national AMR strategy and plan is available, covering both health and agricultural sectors.</p> <p>GLASS registration was done in 2018.</p> <p>There are ongoing preparations for AMR surveillance to be conducted in hospitals in three provinces.</p> <p>Several AMR awareness initiatives have been done (including KAP study conducted).</p> <p>Pharmacovigilance guidelines were developed (includes antibiotic use).</p>	<p>Additional efforts are required as this is a new agenda and requires multisectoral coordination.</p> <p>Low level of awareness exists on antimicrobial use.</p> <p>There is data/information limitation on antibiotic consumption and rational use and AMR patterns in humans and animals.</p>	<p>Start AMR surveillance in the selected hospitals.</p> <p>Share AMR profiles with health care providers.</p> <p>Expand AMR advocacy to a wider audience</p> <p>Establish a mechanism to facilitate implementation of action plan including M&amp;E.</p>

<p>Safety of patients, staff and community in the healthcare setting ensured through functional IPC structure and network in all health facilities;</p> <p>Healthcare staff are adequately trained to ensure proper implementation of IPC measures in healthcare settings to reduce risk of disease transmission;</p> <p>Optimal IPC measures implemented with adequate equipment and consumables available in an appropriate environment;</p> <p>Surveillance system for hospital-acquired infections in place;</p> <p>Ensure health facilities are following IPC best practices, surveillance and sharing lessons learned through meetings and reports.</p>	<p>All provincial hospitals have IPC committees.</p> <p>An IPC Strategy is developed.</p> <p>There is ongoing training of sub-national, i.e. district and provincial hospitals, staff on IPC practices. Job aids, e.g. posters, have been developed to help staff practice what they learn during the training courses.</p> <p>Assessments of IPC capacities and practices in provincial and district hospitals began in 2018. As of January 2019, 13 provincial and 40 district hospitals have been assessed. Assessment results are used to make adjustments in the training of staff and IPC program plans.</p>	<p>Many hospitals face difficulties in implementing IPC standards due to the following:</p> <ul style="list-style-type: none"> <li>• Lack of needed equipment like autoclaves and incinerators;</li> <li>• Problems with the quality of their water supply;</li> <li>• Limited and/or delayed release of funds for purchase of supplies like personal protective equipment and hand wash solutions;</li> <li>• Inadequate waste management.</li> </ul>	<p>Continue doing IPC assessments of health facilities and use the results to improve capacity.</p> <p>Ensure provision of supplies and equipment for IPC.</p> <p>Improve medical waste management in health care facilities.</p> <p>Develop a mechanism for in-service training on IPC.</p> <p>Conduct a regular review of the implementation of IPC standards.</p>
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Immunization			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>The plan doesn't have specific goals on Immunization in the plan of EID, PHE &amp; HS, but it has separate plan as per the EPI (NIP) program.</p> <p>We reviewed progress against the 2017 JEE recommendations:</p> <p>Expand NIP management capacity at subnational levels</p> <p>Conduct refresher and on-the-job training to health staff</p> <p>Ensure implementation of high-quality micro-plans for outreach sessions to hard-to-reach populations</p>	<p>Immunization Law was passed by the National Assembly in June 2018 and corresponding Presidential Decree was signed in August 2018. The law details the responsibilities of the government, private sector and communities. It provides the national immunization program with a legal framework for implementation of various immunization-related activities.</p> <p>Training of sub-national EPI managers has been done.</p> <p>High-risk areas (with low vaccination coverage) have been identified and mopping up done.</p> <p>New cold chain equipment has been provided to replace broken equipment.</p> <p>There is improved communication regarding immunization at community level. Key messages and audio-video materials have been translated to five of 11 priority local dialects. Job aids have been created for health center and community-based health staff. These facilitate outreach to ethnic minorities.</p> <p>In 2018, a 2<sup>nd</sup> Measles-Rubella dose was added to the national infant vaccination schedule.</p> <p>Use of DHIS2 software for monitoring immunization activities including vaccination coverage, is being rolled out.</p> <p>In July 2018 an EPI program review was carried out with support from WHO, UNICEF and other partners. Results</p>	<p>Variability related to target population estimates (denominator) can lead to difficulties on assessing program performance of immunization.</p> <p>Vaccination coverage is still below target levels in many districts.</p>	<p>The population should be monitored carefully through enhanced surveillance to detect any threats and events due to vaccine-preventable diseases, including adverse events following immunizations (AEFIs).</p> <p>MOH should work with the Lao bureau of statistics and partners to agree on common target population estimates. Continuously monitor vaccination coverage levels and consider doing sero-surveys. Identify gaps in coverage and conduct mopping-up activities as indicated.</p> <p>Improve vaccination activities at fixed sites.</p> <p>Continue training peripheral staff in micro-planning.</p> <p>Develop and maintain a system for maintenance of cold chain equipment. This could include creating regional hubs for repair of equipment.</p>



<p>Prioritize communication strategies in the NIP</p> <p>Consider planning a comprehensive EPI review in 2017–2018.</p>	<p>from the review were used to update the national immunization plan.</p>		
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## APSED Focus Area 6: Risk Communication

Risk Communication			
National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Provide appropriate risk communication messages to the community during outbreaks and public health emergencies through collaboration and integration among stakeholders at the international, national and sub-national levels;</p> <p>Effective risk communication during emergencies through implementation of guidelines and SOP supported by National Health Communication policy and strategy;</p> <p>Desired behaviour change outcomes through improved Knowledge, Attitude, Perception (KAP) of target audiences</p>	<p>Prime Minister and Health Minister’s decrees on the National Health Communication Policy and Strategy were developed and disseminated.</p> <p>Health communication taskforce is established.</p> <p>5-year action for health communication in the plan is reviewed and revised regularly.</p> <p>Health promotion staff at sub-national levels have been trained.</p> <p>Key messages for communication have been created and materials translated to the local language.</p> <p>Monitoring of social media and rumor management is being done.</p> <p>Simulation exercises on risk communication were conducted in 7 provinces.</p>	<p>There is a need to assess the impact of risk communication activities, especially among vulnerable groups.</p> <p>More staff need to be trained in risk communication, especially for health emergencies.</p> <p>Coordination and information sharing are only done on an ad hoc basis.</p>	<p>Assess the impact, e.g. changes in knowledge and behaviors, of risk communication activities for recent public health emergencies. Evaluate the extent and quality of community engagement. Use the results of the assessments to improve future risk communication plans and activities.</p> <p>Strengthen risk communication to ethnic minorities. Develop appropriate materials and outreach activities.</p> <p>Consider designating an MOH spokesperson or communications unit that can serve the communication needs of various programs.</p> <p>Continue monitoring social media and proactively respond to rumors.</p> <p>Establish a systematic mechanism for information sharing with internal and external stakeholders.</p> <p>Adopt a systematic approach to dynamic listening, rumour management and message dissemination using both traditional and social media.</p>

## APSED Focus Area 8: Monitoring and Evaluation

National Plan Goals	Progress since February 2017	Challenges	Recommendations
<p>Indicators aligned with IHR/APSED to measure success in implementation of EID and PHE preparedness;</p> <p>Capacity and progress in EID/PHE preparedness assessed against key indicators within timeline.</p>	<p>Lao PDR uses all IHR M&amp;E tools (JEE, SPAR, Simulation Exercises and AARs).</p> <p>Multi-sector annual reviews help in identifying priorities and updating the National Plan. The sharing of the National Plan with partners and participation of partners in such workshops provide opportunities for alignment of their respective activities with the National Plan.</p>	<p>Need to upgrade M&amp;E capacities of local staff.</p>	<p>Continue conducting annual reviews and use M&amp;E results for continuous improvement.</p> <p>Document and share best practices through publications.</p> <p>Develop local M&amp;E tools such as supervisory checklists for specific technical areas.</p> <p>Train national and sub-national staff on how to do M&amp;E for specific technical areas.</p>

## Conclusion

Lao PDR developed the National Plan for EID, PHE and HS (2016-2020) to advance the implementation of IHR. The National Plan, developed with guidance from APSED III, is reviewed annually and has been updated based on the 2017 JEE and other findings of monitoring and evaluation instruments. Lao PDR has made progress in strengthening health security and building its capacities to prevent, detect, and respond to emerging diseases and public health emergencies. Continued progress requires sustainable domestic funding, investments in human resources and critical health infrastructure, multi-sector collaboration, networking with development partners and other countries, and an ongoing commitment to sustaining advancements.

## Appendix 1. Persons met during country visit

### **National Staff from Lao PDR**

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#### ***IHR National Focal Point and Monitoring and Evaluation Group***

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