

Country Name	Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children
Republic of the Philippines	

I. Project Outline

Background	<p>In the Philippines, recent economic growth showed improved health indicators such as under-5 child mortality rate, maternal mortality rate and number of low-birth-weight infants. Under-5 child mortality rate had been in a downward trend for some time but remained high at 34 per 1,000 live births when compared to neighboring Southeast Asian countries like Malaysia and Thailand. The main cause of infant mortality was pneumonia, recording an annual average of 20,000 deaths for every 82,000 infants in 2008 (based on Essential Newborn Care: Department of Health/World Health Organization (WHO) Protocol 2010). International organizations such as the United Nations Children’s Fund (UNICEF) and the WHO supported measures to reduce the child mortality, but such measures were mostly focused on administering medicine to critically-ill patients soon after identifying their severity based on symptoms. Measures against infants’ respiratory infections were based on data from 20 years ago, and no measure was taken yet against viral infectious diseases which were found to be a cause for a disease to advance in severity. Also, it was reported that the Philippines did not respond to drug-resistant bacterium that was rapidly increasing in developing countries. Therefore, it was necessary to review evidence-based strategies against infants’ respiratory infections and conduct research to obtain updated data.</p>				
Objectives of the Project	<p>Through collection and analysis of bacteriological and viral pathogens from children with pneumonia and other respiratory infections, measuring the incidence of pneumonia and pneumonia-associated deaths, identifying risk factors for children with severe pneumonia, developing and evaluating intervention packages, and by sharing research findings, the project aimed at defining etiology, disease burden and risk factors of childhood pneumonia and at validating effective interventions to reduce mortality, thereby contributing to a reduction in mortality due to childhood pneumonia.</p> <ol style="list-style-type: none"> 1. Expected Overall Goal: Mortality due to childhood pneumonia is reduced. 2. Project Purpose: Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated. 				
Activities of the Project	<ol style="list-style-type: none"> 1. Project Site: Metro Manila, Leyte Island (Eastern Visayas Regional Medical Center), Biliran Island (Biliran Provincial Hospital: BPH), Palawan Island (Ospital ng Palawan: ONP) 2. Main Activities: 1) Collection and analysis of bacteriological and viral pathogens from children with pneumonia and other respiratory infections, 2) Measuring the incidence of pneumonia and pneumonia-associated deaths, 3) Identification of risk factors for children with severe pneumonia, 4) Development and evaluation of intervention packages, 5) Sharing of research findings, etc. 3. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"> Japanese Side 1) Experts: 13 persons 2) Trainees Received: 6 persons 3) Equipment: autoclave, centrifuge, bio safety cabinet, CO² incubator, otoscope, upright microscope, etc. 4) Local expense: cost for project activities </td> <td style="width: 50%; vertical-align: top;"> Philippine Side 1. Staff Allocated: 17 persons 2. Land and facility: office space, research space, laboratory space, and warehouse in Research Institute for Tropical Medicine 3. Local expenses: utility cost, cost for traveling, etc. </td> </tr> </table> 			Japanese Side 1) Experts: 13 persons 2) Trainees Received: 6 persons 3) Equipment: autoclave, centrifuge, bio safety cabinet, CO ² incubator, otoscope, upright microscope, etc. 4) Local expense: cost for project activities	Philippine Side 1. Staff Allocated: 17 persons 2. Land and facility: office space, research space, laboratory space, and warehouse in Research Institute for Tropical Medicine 3. Local expenses: utility cost, cost for traveling, etc.
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Project Period	April 2011 – March 2017 (Extension: March 2016 – March 2017)	Project Cost	(ex-ante) 410 million yen, (actual) 550 million yen		
Implementing Agency	Research Institute for Tropical Medicine (RITM)				
Cooperation Agency in Japan	Tohoku University Graduate School of Medicine				

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of the Philippines at the Time of Ex-Ante Evaluation ></p> <p>The project was consistent with Philippines’ development policies as expressed by the “National Objectives of Health” (2011-2016), promoting prevention and control of infectious diseases including pneumonia and other respiratory infectious diseases.</p> <p><Consistency with the Development Needs of the Philippines at the Time of Ex-Ante Evaluation ></p> <p>The project was consistent with Philippines’ development needs of reviewing evidence-based strategies against infants’ respiratory infections and conducting research to obtain the latest data.</p> <p><Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation></p> <p>The project was consistent with “The Country Assistance Program for the Republic of the Philippines” (2008) positioning “rectification of disparities (alleviating poverty and redressing regional disparity)” as one of the three priority areas, including expansion of basic social services.</p>

¹ SATREPS: Science and Technology Research Partnership for Sustainable Development

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Through the SATREPS project, the study targeting childhood pneumonia was conducted, and new scientific findings drawn from the study, such as incidence and risk factors of childhood pneumonia, were published in 14 peer-reviewed, internationally-recognized scientific journals (Indicator 1). Additionally, intervention packages for reducing child mortality due to pneumonia were developed by the SATREPS project, and discussion about the utilization of the intervention packages was started by health-related agencies such as the DOH, the National Economic and Development Authority (NEDA) and the WHO (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued after project completion. Key research outputs of the project (etiology of childhood pneumonia and respiratory infections, disease burden due to childhood pneumonia, and risk factors for severe pneumonia in children) and the above-mentioned new scientific findings have been continuously used by BPH, ONP, the Biliran Provincial Government, and RITM. To illustrate, BPH and ONP have utilized the etiology of childhood pneumonia and respiratory infections for studies to identify bacteria causing pneumonia. RITM has made use of the risk factors for severe pneumonia in children to develop a database for etiological study. Furthermore, RITM has been implementing a new study about the transmission of respiratory syncytial virus infection in Biliran Island from 2017 in collaboration with Tohoku University. On the other hand, the discussion for utilization of the intervention packages have not been held after project completion, for the following reasons: 1) DOH program managers have been changed several times since project completion², 2) Some of the main researchers have already retired from RITM, and 3) Further study of the existing intervention packages as requested by DOH is still ongoing by RITM. For the post project period from 2018 to 2020, 13 articles related to the scientific findings by the SATREPS project were published in academic journals, including the international ones.

RITM has been using the key research equipment supplied by the SATREPS project (bio safety cabinet, CO² incubator, etc.) for the new research project mentioned above. Moreover, the equipment introduced at P3 (Biosafety Level 3) laboratories of RITM has been used for COVID-19 response activities such as testing of laboratory samples, among others.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. While RITM has been using the key research outputs for new research activities, new scientific findings have yet to be reflected in policies, programs or guidelines at both national and international levels. It is because the research outputs of the SATREPS project have not been reported to DOH yet. As mentioned above, the Program Managers of DOH have been frequently changed since 2018 and 2019, and the COVID 19 control has been the focus of DOH since the pandemic broke out in 2020. At the time of ex-post evaluation, the scientific findings obtained by the SATREPS project has not been reflected to policies or programs and the intervention packages recommended by the SATREPS project have not been in effect yet. However, as of year of 2021, RITM plans to make a presentation to the newly assigned Program Managers of DOH once they complete their technical reports.

The reduction in the mortality rate due to children pneumonia from a national average of 26.6% in 2011 to 14.5% in 2018 was attributed mainly to the government’s free immunization program. RITM confirmed that the project has not had any impact on the mortality rate as the project only evaluated the implementation of the Integrated Management of Childhood Illness.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impacts were observed at the time of ex-post evaluation. During the SATREPS project, researchers of RITM were observed to have improved their writing and presentation skills which can be attributed to the project activities such as workshops for technical writing, peer reviews of manuscripts, and mentoring by researchers of Tohoku University. In addition, the project’s attempt to share its research outputs and scientific findings with stakeholders improved to some extent the scientific knowledge and literacy of the DOH and local government units in the project areas. As a result, some benefits were brought in, such as the allocation of more funding to related studies and the emergence of more opportunities to share the latest studies.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.	1. New scientific findings related to prevention and control of childhood pneumonia are published in more than 10 peer-reviewed internationally recognized scientific journals by the end of the project period.	Status of the Achievement: Achieved (Continued) (Project Completion) • The study targeting childhood pneumonia was conducted, and new scientific findings drawn from the study were published in 14 peer-reviewed internationally recognized scientific journals. (Ex-post Evaluation) • Key research outputs (etiology of childhood pneumonia and respiratory infections, disease burden due to childhood pneumonia, and risk factors for severe pneumonia in children) of the project and the above-mentioned new scientific findings have continuously been used by BPH, ONP, Biliran Provincial Government, and the RITM.

² Dengue vaccine immunization cases were filed against many DOH senior officials and DOE was required to take actions for more than 3,200 vaccinees who had been hospitalized presumably for the period from 2016 to 2018 though the government dengue vaccine immunization program had been promoted. (Source: Philippine DOH website, <https://doh.gov.ph/node/13749>, as of July, 2021)

		<ul style="list-style-type: none"> 13 articles related to the scientific findings by the SATREPS project were published in academic journals, including the international ones, for the post project period from 2018 to 2020.
	2. Discussions with regard to the utilization of intervention package and/or recommended strategy for reducing child mortality due to pneumonia are started with relevant local and national health authorities including DOH and LGU by the time of the Terminal Evaluation.	<p>Status of the Achievement: Achieved (Not Continued) (Project Completion)</p> <ul style="list-style-type: none"> Intervention packages for reducing child mortality due to pneumonia were developed by the project, and the utilization of the intervention packages started to be discussed among the following domestic and overseas agencies: <ul style="list-style-type: none"> ➤ The central office of the DOH ➤ The Bureau of International Health Cooperation of the DOH ➤ The Bureau of Health Policy Development Planning of the DOH ➤ The Bureau of Disease Prevention and Control of the DOH ➤ The Philippine Council for Health Research and Development ➤ The National Economic and Development Authority ➤ The WHO ➤ The UNICEF ➤ JICA Philippine Office ➤ Tohoku University ➤ The RITM <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none"> No follow-up discussions on the intervention packages were held.
(Expected Overall Goal) Mortality due to childhood pneumonia is reduced.	1. Mortality due to childhood pneumonia is reduced.	<p>(Ex-post Evaluation) Not Achieved</p> <ul style="list-style-type: none"> Since the new scientific findings have not been reflected yet in any policy, program or guideline at the national or international levels, the intervention packages recommended by the project have yet to be in effect and therefore to be carried out. As such, the project has not had any impact on the mortality rate. It is presumably indicated that the reduction in the mortality rate due to children pneumonia from 26.6% in 2011 to only 14.5% in 2018 has been attributed mainly to the government's free immunization program.

Source : Terminal Evaluation Report, Questionnaire and interview to the RITM

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 134% and 120%, respectively). The project activities were one year behind the schedule at the time of mid-term review due to the delayed hiring of project staff, the delayed wiring works for the backup generators at the local sites and the delayed approval process on the researches by the Philippine side. In addition, the super typhoon Yolanda hit the project sites in November 2013, and the damages caused by the typhoon hampered the project activities. The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

One of the Strategic Goal 1 (Better health outcomes) of “the National Objectives of Health 2017-2022” aims at maternal, newborn and child health including eliminating communicable disease. As the SATREPS project aimed to reduce the mortality due to childhood pneumonia, it has been endorsed by the national goal.

<Institutional/Organizational Aspect>

There has not been any change in the institutional/organizational structure to conduct studies on childhood pneumonia. Most of the 17 researchers involved in the SATREPS project (among the 174 researchers of RITM's total personnel of 1,343) are still working with RITM, and can continue to conduct studies without any problem. In addition, research on the intervention packages developed by the SATREPS project have been continued by RITM under the request of DOH. Thus, it is expected to utilize the research outputs in the future.

The maintenance of the equipment provided by the project has been carried out by biomedical engineers of RITM. The engineers perform preventive maintenance on a regular basis. Therefore, no significant problems have occurred so far.

The scientific literacy for utilization of the research outcomes of the SATREPS project of the central government officers, including DOH and local health officers in the project sites of this SATREPS project have improved through their participations in the research forums jointly organized by RITM and Tohoku University from 2018 to 2020. As mentioned above, RITM plans to make presentations to the newly assigned Program Managers of DOH in 2021 after completion of their technical reports in order to reflect the research outputs by the SATREPS project into policies and guidelines.

<Technical Aspect>

Most of the researchers of RITM, which were involved in the project, have still been working and sustained their knowledge and skills for studies on childhood pneumonia by attending research workshops and forums and conducting related studies. Additionally, they conducted feedback meetings and research forums in collaboration with Tohoku University in 2018 and 2019, which partially contributed to the enhancement of their knowledge and skills.

The researchers also have sustained the knowledge and skills for proper operation and preventive maintenance of the equipment provided by the project by attending related technical training conducted by equipment suppliers and through peer-to-peer consultations. Biomedical engineers of RITM have sustained the knowledge and skills necessary for the maintenance of the equipment by conducting in-house and on-the-job trainings.

<Financial Aspect>

As shown on the table, the budget of RITM is increasing every year. According to RITM, a sufficient budget has been allocated from the central government for studies using the research outputs and scientific findings of the project and for the operation and maintenance of the equipment provided by the project. In addition, RITM reported to have acquired external grants for collaborative studies with other research agencies. This healthy financial situation of RITM is expected to continue in the future.

Budget for the RITM (Unit: in millions, Philippine peso)			
2017	2018	2019	2020
488.5	554.2	683.4	742.9

<Evaluation Result>

In light of the above, no problem has been observed in any aspects of the implementing agency. Therefore, the sustainability of the effectiveness is high.

5 Summary of the Evaluation

The project achieved the Project Purpose aiming to define etiology, disease burden and risk factors of childhood pneumonia and validate effective interventions to reduce mortality due to pneumonia in children but Overall Goal aiming to reduce mortality due to childhood pneumonia has not been achieved yet. Although consultations on utilization of the intervention packages recommended by the project have yet started, the key research outputs have been continuously utilized for other researches by various institutions and it is expected that RITM will contact DOH to promote utilization of the intervention packages. . As for efficiency, the project cost and period exceeded the plan.

Considering all the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- Discussion with government’s health authorities for the utilization of the project’s research outputs to be incorporated into national policy or program or guidelines have not been conducted since the end of the project. As such, the new evidence drawn by the project’s researchers have not been used or reflected yet in any national or international policies, programs or guidelines. Therefore, it is recommended that RITM continues research on the intervention packages and conduct consultative meetings, health forums and similar activities with DOH, the WHO and other related health organizations to discuss the inclusion of project’s findings and recommended intervention strategies and packages in existing policies, guidelines or programs, especially in light of the COVID-19 pandemic.

Lessons Learned for JICA:

- To ensure utilization of research findings and products in policy formulation, it is important that related indicators leading towards such utilization be defined at the Output and Project Purpose levels. For example, draft policies or draft amendments to existing policies can be an indicator for the Project Purpose level at least in order to clearly indicate actions to be taken for utilization of research outcomes. If these indicators are defined at the results level, then activities towards producing such outputs and outcome are defined.



Laboratory staff performing cell maintenance inside a Biological Safety Cabinet (BSC) in P3 Laboratory



Observation of inoculated cells in 96-well plates looking for cytopathic effects using inverted microscope by laboratory staff.