

Republic of Indonesia  
PERSAHABATAN GENERAL HOSPITAL

Republic of Indonesia  
Collaboration Program with the Private  
Sector for Disseminating Japanese  
Technology for diagnostic technique of  
trachea, bronchus, lung cancer by  
endoscopy Final Report Summary

JULY, 2016

Japan International Cooperation Agency (JICA)

FUJIFILM Corporation

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JR
16-087

# Chapter 1 Project Outline

## 1-1 Background and Purpose of this Project

### 1) Background

The number of patients in Indonesia with cancer have been increasing exponentially for the past 20 years. Many of whom are attending medical facilities for cancer treatment, but for most cases it is too late. During the late 1990s Indonesia's Ministry of Health formulated a comprehensive cancer control plan, putting into effect the "Population Cancer Control (PDCC)". (PDCC: Increasing public awareness of cancer, deepening their knowledge of cancer, and indicating the prevention and early detection of cancer.)

There are many sufferers of, and deaths from lung, trachea, and bronchus cancers in the ASEAN countries. Needless to say, improvement is required in health care institutions. Furthermore, due to areas with high levels of air pollution and the high percentage of smokers, a high number of patients have bronchoscope related tuberculosis and pneumonia and COPD (chronic obstructive pulmonary diseases). It is important that the processes for detecting and diagnosing bronchial diseases, tuberculosis, etc. with the use of endoscopes, can also detect and treat cancer sooner.

On the other hand, there are approximately 600 pulmonologists for a population of about 240 million people. Compared to Japan, this is an insufficient number. Although Indonesia's policies are aiming for universal health insurance, the increasing number of patients may explain the reports from physicians of the lack of staff and diagnostics technologies.

We are entering an age in Indonesia where endoscopes are prevailing in the digestive field (200,000 cases a year), yet the endoscopic techniques in the respiratory field are still in the early phase (3000 cases a year). So many people suffer and dies from lung, trachea, and bronchus cancers due to the high percentage of smokers. To solve this problem medically we expect a decrease in cancer mortality through early detection and treatment, through the implementation of diagnosis technology for endoscope related cancers. It is also important to conduct medical examinations that screen for cancer, as well as to inform local residents the importance of regular healthcare to protect themselves from other diseases, which can improve the health of Indonesia's population as a whole.

### 2) Technology to be Implemented in Indonesia and the Project Aim

#### (1) Technology to be Implemented in Indonesia

The knowledge of Japanese style diagnostics for lung, trachea, and bronchus cancers using an endoscope. The following products are products to be implemented: Bronchoscope "EB series", ultrasound processor "SU-8000", ultrasound bronchoscope "EB-530US", as well as the high-frequency knife used with endoscopies, forceps, accessories such as balloons etc., endoscope disinfection equipment, and other endoscope-related products such as monitors.

While the above technology is being implemented throughout Indonesia, there will be on-site technical training in cooperation with Japanese medical institutions, as well as the promotion of Japanese techniques when using endoscopes for detecting cancer.

## (2) Project Aim

As discussed previously, gastrointestinal, stomach and colon endoscopies in Indonesia are still in the early stages of being implemented throughout the country. Endoscopic techniques to examine respiratory diseases such as the bronchial cancer, are also still in the introductory phase. However, due to the high percentage of smokers, there is also a high number of patients and deaths from lung and bronchus cancers, which is an issue for health and medical services; there is a latent need for our products. Our company wishes to export its bronchoscope "EB series" and ultrasound equipment "SU-8000" and "EB-530US", as well as sell high-frequency knives, forceps, consumable parts such as balloons (accessories), and provide after-sales services.

## 1-2 Implementation Contents

### 1) The Goal of this Project

Indonesia is the 4th largest country in the world with a population of 240 million people. It is currently developing its medical technology and market, and is a hidden potential for a large market similar to India and China.

Indonesia only has around 300 endoscopists. Although the spread of endoscopies in the digestive field are still in its early stages it is speeding up, and in the last year the digestive field had 200,000 endoscopy cases. On the other hand, endoscopy technologies and examinations for bronchus cancers etc in the respiratory field are also in the early stages, yet there were only 3000 endoscopy cases in the last year. Despite this there are a high number of patients and deaths from lung and bronchus cancers due to the high percentage of smokers in Indonesia. This is an issue for health institutions but means there is a latent need for our products.

We plan to provide local pulmonologists with the Japanese techniques for bronchoscope procedures and Endobronchial Ultrasound-guided Transbronchial Needle Aspiration (EBUS-TBNA) and implement our products across Indonesia by building a relationship and carrying out training with Key Opinion Leaders (KOL) from the bronchial endoscopy field.

## 1-3 Implementation Set-up

### 1) Implementation Set-up and Division of Roles

Persahabatan General Hospital, affiliated with the National University of Indonesia, is the best teaching hospital in the respiratory field, and has been selected as the partner hospital for this program. Doctor Hideo Saka, chairman of the 39th Annual Meeting of the Japanese Respiratory Endoscopic Society meeting, and Japan's leading pulmonologist (at National Hospital Organization Nagoya Medical Center), will organize the Japanese physicians who will be working on local training at the center. Doctor Masahide Oki (National Hospital Organization Nagoya Medical Center), Doctor Teruomi Miyazawa (St. Marianna University School of Medicine), and Doctor Daisuke Himeji (Miyazaki Prefectural Miyazaki Hospital) will also be cooperating in this program. Fujifilm would like to invite trainee candidates from all over Indonesia. PT MEDISON (Indonesia Fujifilm endoscope agency) has asked for the cooperation of Persahabatan General Hospital and selected the physicians, and the hospital had called for pulmonologists from all across Indonesia.

## 2) Fujifilm Corporation

Fujifilm from Japan and Fujifilm Asia Pacific Pte.Ltd. have cooperated to determine the training curriculum, the training dates, narrow the selection for physicians for training, and coordinated with Japanese physicians and local cooperating hospital of Persahabatan General Hospital, etc., as well as project promotion.

## 3) PERSAHABATAN GENERAL HOSPITAL Affiliated with the National University of Indonesia

Budhi Antariska, MD, Ph.D, leader in respiratory medicine, as well as Faisal Yunus, MD, Ph.D, chairman of Indonesia Respiratory Society, Sita Andarini, Ph.D who works under him, and Wahyu Aniwidyaningsih, MD, Ph.D, are the physicians who are candidates for training program. The hospital has also asked other physicians in Indonesia to request to the hospitals they are employed at for the fees, or to provide the fees themselves, to take part in the training program. As previously mentioned, Fujifilm and the Persahabatan General Hospital have cooperated in matters surrounding attracting physicians to be the subject of training, each doctor's scheduling, arrangements, assignment of the venue etc., as well as cooperation with the project in general.

## 1-4 Outline of this Project

### 1) Points of this Project

- From February 2015 to February 2016, there were 4 local activities for lectures and hands-on training of the bronchoscope, training 46 pulmonologists across Indonesia (1st: 12 doctors, 2nd: 12 doctors , 3rd: 12 doctors , 4th: 10 doctors).
- Due to Persahabatan General Hospital lobbying Indonesia's Ministry of Health, this program has been recognized as a necessary part of the training for medical license updates, and has attracted even more trainees from across the country.
- We trained Wahyu Aniwidyaningsih, MD, Ph.D, Dr. Dicky, and 4 other trainers at Persahabatan General Hospital, and they could contribute to physician training in the same hospital.
- Doctor Hideo Saka and Doctor Daisuke Himeji did a presentation at the Indonesian Respiratory Society to the respiratory physicians who were there (about 200 people), describing the outline of bronchoscope procedures and introducing this project.
- Two sets of bronchoscope systems were procured, and after hands-on training was provided, they were assigned to Persahabatan General Hospital's Respiratory Department.
- The Bronchoscope Training Center at Persahabatan General Hospital was opened when this project was completed in March 2016.

### 2) This Projects Goals

We plan to provide local pulmonologists with the Japanese techniques for bronchoscope procedures and Endobronchial Ultrasound-guided Transbronchial Needle Aspiration (EBUS-TBNA) and implement our products across Indonesia by building a relationship and carrying out training with Key Opinion Leaders (KOL) from the bronchial endoscopy field.

3) Implementation Period of this Project  
January 2015~July 2016 (One and half year)

4) Activities : Outline of all four training courses

① 1st Training

Date	From 6(Fri), to 7(Sat), February 2015
Place	Persahabatan General Hospital Jl. Persahabatan Raya No.1, Jakarta Timur, Daerah Khusus Ibukota Jakarta 13230 Indonesia
Participant	<b>【Japan-side Doctors】</b> Teruomi Miyazawa, MD, PhD, FCCP; St. Marianna University School of Medicine Hideo Saka, MD, PhD; National Hospital Organization Nagoya Medical Center, Chair at Departments of Respiratory Medicine and Medical Oncology <b>【Indonesia-side Doctors】</b> 12 doctors from Persahabatan general hospital Respiratory Medicine
Programs	<b>【Training Plan】</b> First day: lectures and hands-on training Second day: hands-on training, comprehension tests and answer-checks

② 2nd Training

Date	From 8(Fri), to 9(Sat), March 2015
Place	Persahabatan General Hospital Jl. Persahabatan Raya No.1, Jakarta Timur, Daerah Khusus Ibukota Jakarta 13230 Indonesia
Participant	<b>【Japan-side Doctors】</b> Masahide Oki, MD,FCCP; National Hospital Organization Nagoya Medical Center <b>【Indonesia-side Doctors】</b> 12doctors from 5 hospitals at Jakarta and Java island.
Programs	<b>【Training Plan】</b> First day: lectures and hands-on training Second day: hands-on training, comprehension tests and answer-checks

③ 3rd Training

Date	From 9(Fri), to 10(Sat), October 2015
Place	Persahabatan General Hospital Jl. Persahabatan Raya No.1, Jakarta Timur, Daerah Khusus Ibukota Jakarta 13230 Indonesia
Participant	<b>【Japan-side Doctors】</b> Masahide Oki, M.D.FCCP; National Hospital Organization Nagoya Medical Center Daisuke Himeji, M.D.,Ph.D.; Miyazaki Prefectural Miyazaki Hospital Department of internal Medicine <b>【Indonesia-side Doctors】</b> 12 doctors from 5hospitals at Jakarta and Sumatra island.
Programs	<b>【Training Plan】</b>

	First day: lectures and hands-on training Second day: hands-on training, comprehension tests and answer-checks
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④ 4th Training

Date	From 19(Fri), to 20(Sat), February 2016
Place	HOTEL BOROBUDUR JAKARTA Jl. Lapangan Banteng Selatan No.1, PO Box 1329, Monas, Jakarta, 10710 Indonesia
Participant	【Japan-side Doctors】 Hideo Saka, MD, PhD; National Hospital Organization Nagoya Medical Center, Chair at Departments of Respiratory Medicine and Medical Oncology Daisuke Himeji, M.D.,Ph.D.; Miyazaki Prefectural Miyazaki Hospital Department of internal Medicine 【Indonesia-side Doctors】 10doctors from 7hospitals at Jakarta, Sumatra island, Sulawesi island, and Papuwa island.
Programs	【Training Plan】 First day: lectures and hands-on training Second day: hands-on training, comprehension tests and answer-checks, Presentation at Scientific Meeting of Pulmonology and Respiratory Medicine (PIPKRA)

5) Equipment Details Prepared by this Project

This project procured the following equipment (Table 1), JICA approved equipment which was donated after this project's completion. These training booths are needed for four groups of three people, so the Indonesian endoscope agency of PT MEDISON also included a demo machine and consumable goods (forceps, consumable parts such as balloon) for use in training.

Table1 Equipment Prepared by this Project

items	Name of item	number
Endoscopy Digital Video Processor	VP-4450HD	2
Endoscopy Light Source	XL-4450	2
Ultrasound Processor	SU-8000	1
Video Bronchoscope	EB-530H	1
Video Bronchoscope	EB-530T	1
Video Bronchoscope	EB-530P	1
Ultrasound Bronchoscope	EB-530US	1

## 1-5 The Results of this Project

### 1) Training of Pulmonologists and Development of Advising Physicians

As previously discussed, we had gathered 46 pulmonologists from across Indonesia to be trained in the basics of respiratory endoscope, and so that they could take the practical techniques on endoscopy back to the hospitals they work at. A further four trainers were trained under the guidance of Japanese physicians at Persahabatan General Hospital.

## 2) Influence in Attracting Physicians Throughout Indonesia

This project selected a wide range of physicians from across Indonesia, including the islands, to take part in training, and to make people aware of the benefits to the whole nation.

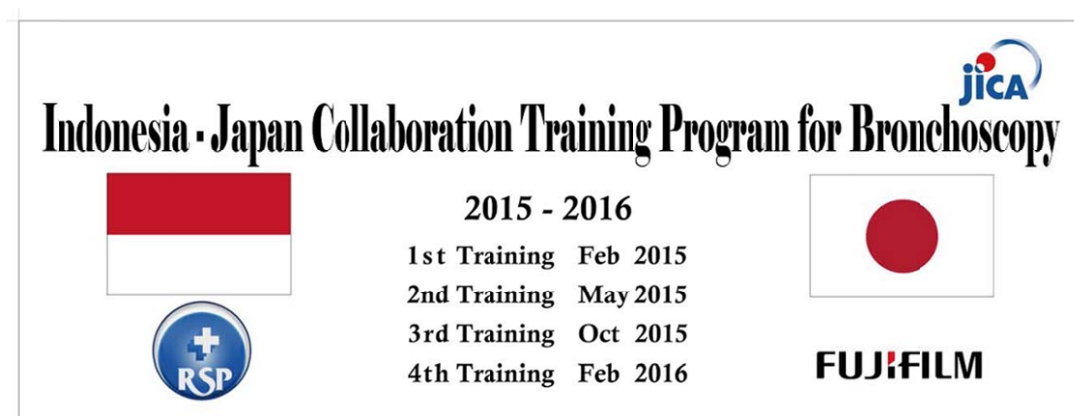
Table 2: The locations of all the physicians who took part in the four training sessions.



## 3) Establishing the Training Center

In March 2016 Persahabatan General Hospital Training Center was opened. This project trained four trainer physicians who we plan to continue at the center of endobronchial endoscopic training in Indonesia. There have been cases where the physicians from Persahabatan General Hospital have travelled to local hospitals and provided training in endobronchial endoscopic techniques, and are welcomed training opportunities. A plaque commemorating Indonesia and Japan cooperation of this project (Table 3) has been erected in the entrance of the training center.

Table 3: The plaque given to commemorate this project.



## 4) Presentation at Scientific Meeting of Pulmonology and Respiratory Medicine (PIPKRA)

The Persahabatan General Hospital arranged to host the Association, where Doctor Hideo Saka and

Doctor Daisuke Himeji held a presentation to pulmonologists who were there (about 200 people), giving a lecture on the techniques for bronchoscope procedures and introducing this project. They held a Q&A afterwards which showed a high level of interest in this project.

5) Updated the Bronchoscope Systems at Persahabatan General Hospital

After the four training sessions had ended in February 2016, the equipment provided for this project were given to the clinic, and the bronchoscope systems at Persahabatan General Hospital were updated. Considering that maintenance has not been sufficiently carried out for the existing bronchoscope systems, when we donated our company's endoscope systems to the hospital, it was done so through our PT MEDISON so that proper maintenance could be carried out.



## **Chapter 2 Business Development Direction and Development Effectiveness**

### **2-1. Examining the Business Development Direction**

#### 1) Business Outline

This project developed an understanding of the Indonesian health care system and cancer screening, as well as expand the business by taking advantage of the network of contacts between the policy authorities and medical personnel in the field. It furthermore continued to show the effectiveness of Japan's medical examination and treatment through endoscope-related materials, equipment and procedural know-how. It improved examinations through Japanese medical examinations and treatment, and expands the market for our products and strengthen competition.

#### 2) Business Implementation

The development and manufacture of products will continue in Japan, the agent will order each item which will be shipped to specified locations. In order to build sales networks across the world, our company have strengthened its sales in Indonesia through this project, although this has had no great impact on overall manufacturing planning.

### **2-2. Business Development Challenges and Possibilities**

There is currently a strong interest and demand for bronchoscope systems in the market. Equipment that has been used for a number of years is being used well pass the recommended time period, therefore creating more opportunities to replace this equipment as a result.

So that university hospitals that teach spreads across the nation, training and technical training will be conducted while we take advantage of the mobility of sales agencies.

### **2-3. Business Development Schedule**

In one year there will be a cornerstone exhibition held by a major respiratory system academic society, which we plan to schedule efficiently to attract people to our workshops and demonstrations held there.

### **2-4. Expected Development Results**

#### 1) Expected Development Results through Business

##### (1) Establishing the Training Center

In March 2016 the training center at Persahabatan General Hospital opened. The training center itself was established through Persahabatan General Hospital's own business plan and budget. The training that occurs at this training center is through Persahabatan General Hospital's own curriculum. We believe that as a teaching hospital, it must continue to be a leader in the training of bronchoscopists.

##### (2) The Contribution Possibilities to the Social and Economic Development of Countries, Regions and Cities

Indonesia is tackling a serious problem with respiratory diseases and this project can contribute towards the health and medical services policy. We believe that improving the technology for diagnosis and treatment through the utilization of bronchoscopes, will improve the national QOL (Quality of Life).

We believe that through the training center that opened due to this project and performing human resource development, we have been able to attain the technical improvements needed for diagnosis and medical care.

## **2-5. Effective Development Scenario**

Often the marketing model is utilized so that training is conducted concurrently as new medical equipment is being developed. The product is recognized, and with the conviction of the products use and effectiveness, various physicians within hospitals are prepared individually so they can use the product. This has a tendency to advance the decision towards the purchase of more expensive equipment. This marketing model has been demonstrated as being effective in the sale of endoscope systems in general as well as bronhoscopiesystems.

As a counterpart to this project Persahabatan General Hospital is the best teaching hospital in Indonesia in the respiratory field. Indonesia's Ministry of Health recognizes this training course (a points system) in updating one's medical license, and becoming a student of it is now necessary. Students who take Persahabatan General Hospital's training course for the Ministry of Public Health are able to receive a high number of points towards their overall training. This is ground-breaking.

Acquiring these points means that physicians who attend this training program must travel to Jakarta, which means it guarantees a boost to scheduling and travel budgets.

Through the implementation of this project we have improved our relationship with the authorities within Persahabatan General Hospital, and as role as counterparts continues to change we continue in the same business of training, we firmly carry out the inclusion of the Ministry of Health, and expect to continue seeing high achievements.

## **2-6. The Need for ODA Cooperation Project**

For the past 20 years in Indonesia the number of patients with cancer has been on the rise, and a vast majority of those admitted into medical institutions have had cancer in its advanced stage. During the late 1990s Indonesia's Ministry of Health formulated a comprehensive cancer control plan, putting into effect the "Population Cancer Control (PDCC)". (PDCC: Increasing public awareness of cancer, deepening their knowledge of cancer, and indicating the prevention and early detection of cancer.)

As previously discussed there are many sufferers of, and deaths from lung, trachea, and bronchus cancers in the ASEAN countries. Needless to say, improvement is required in health care institutions. Furthermore, due to areas with high levels of air pollution and the high percentage of smokers, a high number of patients have bronchoscope related tuberculosis and pneumonia and COPD (chronic obstructive pulmonary diseases). It is important that the processes for detecting and diagnosing bronchial diseases, tuberculosis, etc. with the use of endoscopes, can also detect and treat cancer sooner.

## **2-7. Expected Effects and Outline of the ODA Cooperation Project**

Short-term effects: Because of the effective use of the implementation of the project established by the Persahabatan General Hospital training center, and the use of training center as an operational site, bronchoscopes related diagnosis and medical technology have improved. Furthermore, the advising

physicians who were trained in the training center, are now necessary to supporting the advancement of the public hospital's training center in the training of endobronchial endoscopy.

Long-term effects: We will continue to support the institutions plans for introducing population cancer screening and the establishment of the cancer examination center.

With the implementation of projects in collaboration with the ODA, such as the one previously discussed, it is possible to further accelerate the improvement and implement the test diagnostic technologies for the early detection and treatment of lung, trachea, bronchus cancers, though the development of bronchoscopists. We will furthermore be able to contribute solutions to the development issues in the health care sector.

As lifestyle diseases are expected to increase in the future, we will support comprehensive cancer control through the introduction of a system of population cancer screening for cancer prevention. It is expected that this should suppress the ever increasing national medical expenses and contribute to the improvement of the QOL (Quality of Life) in Indonesia.