JICA

FOR A

STRONGER

VIETNAM

30 years

COOPERATION ON HEALTH AND MEDICAL CARE BETWEEN JAPAN - VIETNAM

JICA

1992 - 2022

A journey of 30 years of cooperation on health and medical care between Governments of Japan and Vietnam via JICA

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COVER PHOTO

Administration of measles vaccine at Hanoi Center for Preventive Medicine - **Photo: Viet Cuong**

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SỞ Y TẾ TỈNH AN GIANG
TRUNG TÂM KIỂM SOÁT BỆNH TẬT
SỔ THEO DÕI
SỨC KHỎE BÀ MẸ VÀ TRẺ EM

Ladies and gentlemen,

Ever since February 2020, when the COVID-19 pandemic appeared in Vietnam, the Japan International Cooperation Agency (JICA) immediately provided biological support for testing for new variants of the Coronavirus for the National Institute of Hygiene and Epidemiology (NIHE).

During two consecutive years from 2020 to 2021, JICA has procured and donated much COVID-19 prevention equipment to NIHE, Hue Central Hospital, Cho Ray Hospital, Bach Mai Hospital and other Centers for Disease Control, with a total value of about JPY 800 million.

Once again, we fnd the results of JICA's health cooperation with Vietnamese health authorities

over the past two decades to be still effective during the pandemic. With the donation of ventilators, ultrasound machines, ECMO machines, specialized cold boxes to preserve vaccines, etc. JICA wishes to work closely with Vietnam to control the pandemic and achieve sustainable economic development.

We are very pleased to see the imprints of JICA's cooperation on all aspects of Vietnam. These imprints can be seen on important national highways, airports, international seaports, large bridges connecting regions, or simply bridges connecting rural and mountainous residential areas to help improve the local people's lives.

These can be power plants, wind power projects or technical cooperation projects to develop highquality human resources for Vietnam.

But there is one area that has the most impact on the Vietnamese people's lives - the health sector.

From the early 90s of the last century, JICA has supported Vietnam to build hospitals and provide

health equipment for key central hospitals such as Bach Mai Hospital, Hue Central Hospital, and Cho Ray Hospital. Through training programs on technological transfer for these three frontline hospitals, JICA is proud that it also helped the health staff of provincial hospitals to receive training and technology transfer.

As a result, they can admit and save many patients' lives without transferring them to higher-level hospitals.

JICA also supports piloting the Maternal and Child Health Handbook - the Pink Handbook, from Japan's experience, to localities to help improve maternity and child health. It is touching to see many ethnic minority mothers who do not speak the ofcial Kinh language keep a handbook for many years to monitor the health of their children since they were still in the womb.

We are also very honored to have helped Vietnam successfully produce the single measles vaccine (in 2008) and the combined measles-rubella vaccine (in 2018) to serve the Expanded Immunization Program in Vietnam.

Our hearts leap for joy upon seeing young Japanese volunteers patiently massaging limbs and treating the elderly and children in Vietnam during physical therapy class. They have temporarily left their comfortable life and chosen to gain experiences in all regions of Vietnam.

The health cooperation between JICA and Vietnam has entered into the lives of every Vietnamese, creating change and improving people's lives.

That is the ultimate goal in each of our actions!

The connections between people have grown closer, thereby strengthening the friendship between Japan and Vietnam.

Shimizu Akira

Chief Representative
JICA Vietnam Office

COMPANIONS FOR DECADES

The locals call the high-tech center of Hue Central Hospital the ODA Building because the building was built using ODA grants from Japan. The pharmacy in this building also has the sign "ODA Pharmacy". The symbol of health cooperation between JICA and Hue Central Hospital, as such, naturally enters the hearts of the people.

Breakthrough changes

At the Gastroenterology Department in the ODA building, Mr. Pham Dinh Thanh, born in 1964 from Quang Nam, is recuperating after undergoing endoscopic gastric bypass surgery. He has recovered very well and is entirely comfortable after the operation.

"This is the first time I've been treated here, and I do not know anyone. Though, before coming, I had heard a lot about Hue Central Hospital, that they shared many new technologies with Quang Nam," he said. "I used to visit my friends here too. Every visit, I see that the hospital's facilities are expanded, machines are retrofitted, and many good doctors are trained. When I entered treatment myself, the doctors and nurses conscientiously took care of me, so I was completely reassured."

The satisfaction of patients like Mr. Thanh can be felt at first sight. As we browsed through the wards at Hue Central Hospital, every place was clean and tidy. According to a survey by the Ministry of Health (MOH), Hue Central Hospital is among the facilities with the highest patient satisfaction level in the country in recent years. In 2019, this number was 99%. The hospital has completely changed compared to 20 years ago; part of it is thanks to the considerable support of JICA.

Prof. Dr. Pham Nhu Hiep, Director of Hue Central Hospital, said: "After over ten years of cooperation with JICA, we have completely changed the face of the hospital in terms of human resources, health examination and treatment, and patient care, especially the working style of hospital staff. Therefore, Hue Central Hospital has achieved remarkable development to where it is today."

JICA started its cooperation with Hue Central Hospital in 2005 to build a High-Tech Center with official development aid (ODA). This is where the name "ODA building" is derived from.

Hue Central Hospital was built in 1894 and has been around for more than 100 years. Therefore, at that time, although it was a key hospital of the

Hue Central Hospital's Hi-tech Center

A corner of Hue Central Hospital's Hi-tech Center

A Training session on disinfection control

A meeting between the two parties for the discussion on cooperation activities

Equipment supported by JICA are used effectively for medical examination and treatment

> *"For 30 years of JICA cooperation with the Vietnamese health sector, especially with hospitals, JICA's contributions are solid and practical to human resource training, medical examination and treatment, and professional and technical development"*
>
> **- Prof. Dr. Pham Nhu Hiep, Director of Hue Central Hospital**

Central - Central Highlands region, the buildings were seriously degraded. The hospital was located in a large area, and the health examination and treatment areas were scattered. Patients treated in this department sometimes had to go to another block for ultrasounds and film photography. The hospital's equipment was also old and inadequate, while the increasing number of patients sometimes led to an overload, affecting the quality of health examination and treatment.

From 2005 to 2010, the Japanese Government, through JICA, sponsored the construction of a high-tech housing complex on the grounds of Hue Central Hospital. JICA also provides all modern and advanced equipment for health examination and treatment.

After nearly two decades, the ODA Building is still intact to every cement line, wall-mounted wooden brace, and regularly maintains the equipment. Residents in Thua Thien - Hue and neighboring provinces enjoy a clean, beautiful, and convenient health examination and treatment space. The waiting time for examinations and travel distance between departments has been shortened.

Strengthening human resources

The second pillar of change is human resources. Along with upgrading the hospital's facilities, JICA implemented the "Improving the quality of medical services in the Central region" Project from 2005 to 2010 and the "Improving the quality of human resources in healthcare services in the Central Region" project from 2010 - 2015. Hue Central Hospital was selected to implement the health service model and set up a training management system for provincial hospitals for these projects.

"In both projects, JICA strongly supported human resource training for Hue Central Hospital so that we can train provincial and district hospitals of the Central – Central Highlands," Prof. Pham Nhu Hiep said.

Modern, advanced equipment supported by JICA at Hue Central Hospital's High-tech center

In the early 2000s, the Central provinces were faced with extreme difficulties: slow economic development, poverty and limited resources. The frontline hospital in Hue suffered a shortage of equipment, which meant that facilities and capacity in provincial hospitals were many times more limited.

When the projects were implemented, personnel of Hue Central Hospital were sponsored by JICA to study in Japan. Mr. Phan Canh Chuong, Chief Nurse of the Hospital, was sent to Japan in 2006 when he was the Deputy Head of the Nursing Department.

He shared that, initially, he was not comfortable with "studying again" as a manager. But after that, he changed his mind. "The Japanese expert designed the program very well. My program was mainly about management training, with a large portion dedicated to nursing management," Mr. Chuong recalled. "The Japanese are really practical; they guided us towards the final result step by step, without haste. They always take feedback and there is a lot of interaction between students and lecturers."

Chief nurse Phan Canh Chuong said that the knowledge he gained in Japan has been applicable, and most notably has resulted in improvement of hospital infection rates and health care control. After the training course, many Japanese experts worked at Hue Central Hospital and helped him re-train the staff, as well as those at other hospitals in the Central region.

The training activities from the two JICA projects deployed were very diverse. According to the assignment of the MOH, Hue Central Hospital is responsible for capacity building for 7 satellite hospitals in the region, namely Ha Tinh, Quang Binh, Quang Tri, Quang Nam, Quang Ngai, Kon Tum, and Phu Yen provincial hospitals.

Doctor-Second-Degree Specialist Tran Duy Vinh, Deputy Director of the Training Center and Head of the Directing Department of Hue Central Hospital, said: "We have achieved great effectiveness from JICA's activities, such as teaching methods, training management methods, helping the hospital develop a systematic training management system from organization and assessment to deployment activities. Through JICA's activities, the hospital receives a lot of equipment to help improve training. The technology transfer is done through machines, helping students to access modern machines."

> *Not only the Japanese Government but also the Japanese people help Vietnam battle against the Covid-19 pandemic. The most iconic action was the donation of a vaccine from Japan to Vietnam since the pandemic began to spread in Vietnam in 2021. Japan also donated equipment such as ECMO machines, ventilators, etc., with total capital of up to JPY 580 million. We are also giving away ice boxes so as to bring the vaccine of the COVAX program to remote areas, so that residents of these regions are not left behind in this fight"*
>
> - Mr. **Shimizu Akira**, Chief Representative of the JICA Vietnam Office

According to Dr. Vinh, Hue Central Hospital has trained and transferred many technologies to satellite and lower-level hospitals, including high-tech equipment used for procedures such as laparoscopic surgery, interventional endoscopic surgery, cardiovascular intervention technologies, etc.

Activities to improve the capacity of health examination and treatment, as well as training and directing for lower-level personnel have contributed to improving the quality of health examination and treatment for lower-level hospitals. Therefore, difficult cases and complicated techniques can be performed immediately. As a result, the proportion of patients referred to the upper level facilities has decreased, attracting more patients to satellite hospitals. "In the past, cardiac interventions had to be transferred to a higher level, but now lower-level hospitals can handle it immediately, taking advantage of the golden time to save the patient's life," said Doctor Tran Duy Vinh.

Examination and treatment activities at Hue Central hospital are enhanced thanks to JICA's support

When speaking about JICA, all doctors or nurses at Hue Central Hospital also talk about "changes" - landmark changes in healthcare through long-term, persistent and dedicated cooperation.

Cooperation in the fight against Covid-19

JICA's support for Hue Central Hospital was continued and strongly promoted during the Covid-19 pandemic. In August 2021, JICA started implementing the technical cooperation project "Strengthening the capacity of Hue Central Hospital in response to Covid-19 acute respiratory infection pandemic." The Project was implemented in 8 months with a total value of about JPY 200 million (about VND 42 billion), providing ECMO (artificial heart-lung) machine, ventilator, monitor, ambulance and sound refrigerator specialized in vaccine preservation, among other equipment, and providing technical training in the use and management of medical equipment for the Hospital.

When the Covid-19 pandemic broke out most overwhelmingly in the southern region, Hue Central Hospital set up an Intensive Care Center (ICU) for Covid-19 patients in Ho Chi Minh City with a scale of 500 beds. This was the 3rd tier treatment model and the highest tier in the treatment of critically ill patients. There were hundreds of doctors and medical staff working here, the main force of which came from Hue Central Hospital and with the participation of other hospitals in the Central region. The hospital has mobilized many staff, experts, machinery, and equipment for the ICU.

Dr. Nguyen Dinh Khoa, Director of Facility 2 of Hue Central Hospital and Director of ICU, said that the center had treated nearly 1500 patients. The number of discharges was high, and the mortality rate was low compared to other hospitals. Up to 90% of patients were critically ill and had to rely on ECMO, dialysis and continuous mechanical ventilation; many cases have miraculously recovered.

Training and technology transfer activities of Hue Central Hospital once again had the opportunity to be deployed clinically, where the frontline personnel fought for the lives of Covid-19 patients. Doctor Nguyen Dinh Khoa said, "The satellite hospitals participating in ICU had the opportunities to improve their skills. Thanks to the treatment environment with modern and advanced techniques, they had the opportunities to access new technologies and the technical skills of doctors from Hue. They learned various ways of organizing work. None of the member hospitals had ever used ECMO or dialysis equipment before and rarely used ventilators. Working here, they have had access to all these technologies."

> *Recently, JICA continued to support equipment to prevent the spread of the Covid-19 epidemic. This is extremely valuable and long-lasting support. After 30 years, JICA has significantly contributed to changing the quality of medical examination and treatment, especially to improving the quality of human resources of hospitals in Vietnam"*
>
> - Prof. Dr. **Pham Nhu Hiep**, Director of Hue Central Hospital

In addition, JICA also donated health equipment to Cho Ray Hospital, testing equipment to the National Institute of Hygiene and Epidemiology and other units in Vietnam to strengthen their capacity in response to Covid-19.

Over the past two decades, the Japanese Government has been cooperating in supporting Vietnam's national hospitals - namely Bach Mai Hospital in the North, Hue Central Hospital in the Central region and Cho Ray Hospital in the South - to strengthen the hospital functions and staff by enhancing their training and teaching capacity.

Thousands of doctors and medical staff have been trained through JICA's projects. These activities have significantly contributed to improving the capacity of the medical staff at these three hospitals and medical staff in each region. In addition, this cooperation also created the "foundation" for the significant contributions of the Project's training programs in improving the quality of health services in Vietnam.

FACING DEATH

The Biosafety Level (BSL) 3 laboratory funded by the Japanese Government through JICA has helped Vietnam become one of the first four countries in the world to successfully isolate the SARS-CoV-2 virus, creating a turning point in the fight against the Covid-19 pandemic. The laboratory has also helped Vietnam to find ways to respond to other lethal infectious diseases.

International standard laboratory

The Biosafety Level (BSL) 3 laboratory at the National Institute of Hygiene and Epidemiology (NIHE) was opened in January 2008, marking the first time that Vietnam has a BSL 3 laboratory with international standards.

The project was started at a very significant time in Vietnam. "At that time, Vietnam was dealing with SARS (a respiratory syndrome caused by a variant of the coronavirus)," Mr. Shimizu Akira, Chief Representative of JICA in Vietnam, recalled back in 2003. "However, it was not possible to diagnose and analyze the SARS virus in Vietnam, and we had to send the sample to another country to receive the results, which took a week. During the pandemic, we needed immediate action to respond to the threat and 1 week would have been too long."

Upon the proposal of the Vietnamese Government, the Japanese side decided to sponsor Vietnam to develop a BSL 3 laboratory to strengthen its capacity to control hazardous infectious pathogens. With this laboratory, Vietnam no longer has to send samples abroad for analysis.

NIHE staff working in the BSL-3 laboratory

“In 2007, that was the first BSL 3 laboratory in Vietnam. With this laboratory, we could perform in-depth testing to find out the characteristics of influenza A H5N1 virus, ensure testing quality, and support the production of influenza A H5N1 vaccine,” explained Hoang Vu Mai Phuong - Head of the Virology Department of NIHE.

Human resource training

The BSL 3 laboratory has a hazardous environment. Researchers entering the facility must be given maximum protection to prevent exposure or prevent the release of pathogens. Each shift could last for several hours continuously, and any employees leaving the room must remove their protective suits. Specimens brought into the laboratory must pass through a special buffer room.

"Each researcher must be fully equipped with knowledge when performing the tests and competent with operation procedures,” said Ms. Mai Phuong.

Therefore, given the establishment of the BSL-3 laboratory, JICA also implemented the "Capacity Development for NIHE's on Biosafety Implementation" project, with a budget of more than USD 2 million for human resource development.

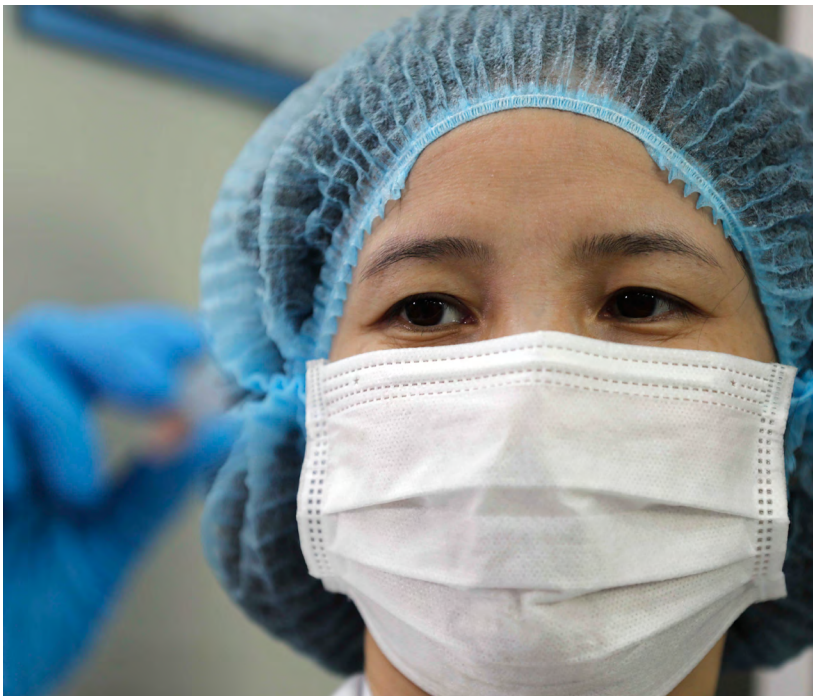
"Not only financing the laboratory and providing modern equipment, Japan also dispatched many Japanese experts to train officials of NIHE to operate and maintain the laboratory," said Mr. Shimizu.

During the next stages, from 2017 onwards, a similar BSL 3 laboratory - funded by JICA - would be built at the Pasteur Institute in Ho Chi Minh City. The lab is expected to be inaugurated in December 2021.

Fighting the Covid-19 pandemic

17 years after the SARS epidemic, the world is now responding to the Covid-19 pandemic. "In 2020, the significance of the laboratory greatly increased when the SARS-CoV-2 virus outbreak occurred," emphasized Ms. Mai Phuong.

National Institute of Hygiene and Epidemiology (NIHE)



With the BSL-3 laboratory of international standards, managed with ISO standards, we were working in the safest environment without any worries"

- **Hoang Vu Mai Phuong,**
Head of Virology Department, NIHE

While countries began to close their borders, the virus causing the disease at that time was still called nCoV and remained a mystery to the world.

Ms. Mai Phuong stated that: "At that time, WHO recommended testing for nCoV virus at the BSL 3 laboratory. NIHE was one of the 2 units in Vietnam that have this laboratory and we conducted the initial testing here."

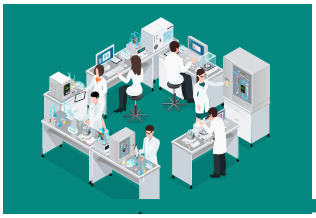
At that time, specimens from neighboring provinces were sent to Hanoi and kept in cold containers, waiting in line in the corridor of the Department of Virology. It took a few days to announce positive or negative results.

Researchers of the Virology Department also began to isolate the virus - which was required to be conducted in a BSL-3 laboratory, in order to discover more information about this virus.

On February 7, 2020, NIHE announced the successful cultivation and isolation of the new variant of coronavirus in the laboratory, making Vietnam one of the first four countries in the world to identify nCoV, later renamed SARS- CoV-2.

The successful isolation of SARS-CoV-2 at that time was significant when the pandemic was at risk of spreading uncontrollably. Ms. Mai Phuong said: "After that success, we could support multiple provinces to test for SARS-CoV-2, supporting the research and production of Covid-19 vaccines, as well as researching and producing test kits".

NIHE and the Pasteur Institute in Ho Chi Minh City have provided technical support and training to the Centers for Disease Control and Prevention (CDC) in many provinces to carry out rapid and large-scale testing for the Covid-19 virus.



The project to build a BSL-3 laboratory at NIHE was implemented from August 2006 to December 2007, with a total cost of nearly USD 8 million. Since 2017, JICA has supported development of a similar laboratory at the Pasteur Institute in Ho Chi Minh City.

NIHE staff working in the BSL-3 laboratory

Mr. Kitaoka Shinichi - JICA President was giving the JICA President Award to NIHE's Director Dr. Dang Duc Anh

This success was the result of long-term health cooperation between Vietnam and Japan. Thanks to the BSL-3 laboratory, Vietnamese researchers had been able to isolate the newly emerged, highly virulent viruses, thereby finding the most effective way to control and respond to the pandemic.

Moreover, this was a protective shield for scientists. "When working with a hazardous agent, everyone wants to work in a safe environment, without being exposed to any risks. With the BSL-3 laboratory of international standards, managed with ISO standards, we were working in the safest environment without any worries," said Head of Virology Department, Hoang Vu Mai Phuong ●

Lab staff are required to be equipped with comprehensive knowledge before carrying out the experiments, and the advanced training on experiment's steps

THE SECRET INSIDE THE POLYVAC VACCINE FACTORY

Every year, millions of doses of "made in Vietnam" measles and measles-rubella vaccines are put into use in the national expanded program on immunization (EPI). These are produced at the factory of the Center for Research and Production of Vaccines and Biologicals (POLYVAC), with technology transferred by Japan, marking Vietnam's autonomy in vaccine production.

The factory that meets WHO standards

POLYVAC's vaccine factory is located in Hoang Mai district, Hanoi. It may be a small building, but this is one of the most modern vaccine production facilities in Vietnam. Sponsored by the Japanese Government, the vaccine factory meets standards set by the World Health Organization.

To get inside, everyone must follow a strict process: Wear antibacterial suits used exclusively in the factory, a closed mask, and a hair cap; change their shoes, and disinfect hands with alcohol to prevent viruses from infiltrating the facility. Strict regulations on temperature, humidity, and air cleanliness are implemented inside the factory and must always be followed.

The factory was funded by the Japanese Government since the early 2004 and was inaugurated in 2006. Director of POLYVAC, Prof. Dr. Nguyen Dang Hien, said: Responding to the call of WHO at the time that Vietnam needed to develop a strategy to eliminate measles, along with Vietnam's very high demand for measles vaccine, The Ministry of Health assigned POLYVAC to take charge of the project to transfer Japanese vaccine production technology.

Out of 10 vaccines under the expanded program on immunization (EPI), Vietnam produced 9 vaccines, including polio vaccines produced by POLYVAC. With their available capacity and human resources as a foundation, POLYVAC is ready to accept the project.

Japanese experts stayed in Vietnam for many years from the time the factory was built to the moment POLYVAC was able to produce its measles and measles-rubella vaccines.

Japan helped build all facilities, workshops, machinery and equipment; as well as set up vaccine production lines. In 2006, the factory was completed and put into production. Japanese experts continued to provide technical support to produce the single

2004

JICA supported POLYVAC to build a measles vaccine factory with a capacity of 7.5 million doses and transfer measles vaccine production technology during the period of 2004-2010. POLYVAC started producing the measles vaccine in 2006.

A corner of the vaccine packaging area in the Center for Research and Production of Vaccines and Biologicals (POLYVAC) of which the construction was supported by JICA

Factory, equipment, production line for manufacturing vaccine at POLYVAC supported by JICA

measles vaccine. In 2010 Vietnam successfully produced this vaccine. In 2014, when the measles epidemic broke out across the country with the number of infected reaching thousands along with a high mortality rate, POLYVAC concentrated its capacity during 3 months to produce more than 6 million doses of vaccine, marking a special milestone in contributing to the control of the pandemic.

After the production of the measles vaccine, in 2011 there was a large rubella epidemic in Vietnam. Many young children and pregnant mothers were infected, and there were even cases where doctors advised patients to terminate their pregnancy. The Ministry of Health gave POLYVAC the next task to produce a measles-rubella vaccine based on existing technology. The combined vaccine production project was implemented from 2013 to 2018, in which the measles-rubella vaccine was licensed by the Ministry to be put into use in 2017, marking the fact that Vietnam no longer has to import vaccines and has been able to produce all vaccines on its own for the expanded program on immunization.

Vaccine production is a complex, delicate process. The measles vaccine is made from chicken embryos, while the measles-rubella vaccine is made from rabbit kidneys. POLYVAC imports clean rabbits from Japan and cleans chicken eggs from Germany. Each pair of breeding rabbits costs up to a hundred million dong, guaranteed to have no pathogens in the breeding line. Rabbits are raised on POLYVAC's own farm with strict procedures: rabbit owners entering the farm must also wear antibacterial clothing from head to toe to protect the rabbits.

However, investing in a clean egg production farm comes at too high a cost, so eggs are imported directly from Germany, with each egg costing hundreds of times more than normal eggs. Each 2-million-dose batch of measles vaccine requires careful care of 7 rabbits, with about 15 batches per year; and each batch of measles-rubella vaccine requires about 400 eggs. Once their kidneys were taken, the rabbits will be disposed. Therefore, there is a small monument in the factory with the inscription: "Gratitude for the animals that have been sacrificed for science" – an initiative that POLYVAC learned from many countries, including Japan.

> *Japanese experts are very enthusiastic in their work, dedicated to instructing and supporting us to produce high-quality vaccines"*
>
> - Prof. **Nguyen Dang Hien**

The stamp that carries miracles

With its current production capacity, POLYVAC is aiming to get WHO to approve its vaccines for export. According to Professor Dr. Nguyen Dang Hien, POLYVAC has submitted documents to WHO for the pre-assessment of 2 vaccines for measles and measles-rubella.

By October 2021, all dossiers were approved by WHO experts. WHO has introduced laboratories in Germany and South Africa for POLYVAC to send samples for evaluation. It is expected that by mid-2022, the pre-qualification process will be completed for the measles vaccine and then the measles-rubella vaccine.

"It is an important milestone that shows that Vietnam's vaccines in general and POLYVAC's vaccines in particular meet the needs of the country and WHO. If Vietnam wants to export its vaccines, they must meet WHO standards. In addition, in some countries, if the vaccine meets WHO standards, the licensing procedure will be quick and no further tests will be required. Therefore, our goal is to get pre-qualification for Vietnamese vaccines."

Coming from a country with advanced biotechnology and a long history of vaccine production, Japanese experts not only transferred technology but also helped Vietnam build a vaccine quality assurance Good Manufacturing Practice (GMP) system with WHO's support.

There is a special feature on each measles and rubella vaccine vial called the VVM (Vial Vaccine Monitor) temperature indicator stamp, which has a white dot on it. The tiny label carries a "miracle": If the vaccine is exposed to high temperature, the white dot will change color: yellow for the measles vaccine and blue for the measles-rubella vaccine - indicating that the vaccine is no longer usable.

The project "Strengthening the Production Capacity of the Measles-Rubella Vaccine" started in May 2013 and finished in 2018, with a total budget of about 707 million Japanese yen (equivalent to 7.51 million USD). About 200 experts from the Japanese technology transfer unit, Kitasato Daiichi Sankyo Vaccine Co., Ltd (KDSV), have come to Vietnam. The Japanese company also received 36 visits of POLYVAC staff to study technology at the company's factory in Japan.

The Measles-Rubella vaccine with the VVM (Vial Vaccine Monitor) stamp produced at POLYVAC

Administration of measles vaccine at Hanoi Center for Preventive Medicine

The data on temperature indicators have been tested through many batches of vaccines and transferred to WHO experts in Switzerland for evaluation. Upon approval, POLYVAC has coordinated with a company from the USA to exclusively produce this VVM label.

"Until 2021, POLYVAC is the only factory in Vietnam with VVM stamps, which are very convenient to use," explained Professor Nguyen Dang Hien. "In remote areas where storage conditions are not available, or where rainfall and storms can cause a power outage causing the temperature of the storage cabinet to rise, the VVM stamps help to identify the quality of the vaccine. One of the conditions for WHO to issue a Pre-Qualification (QR) is to have a temperature indicator stamp."

Through the project from Japan, in addition to receiving technology transfer, the project also helps POLYVAC train human resources, master technology, and orient the development and production of new vaccines in the future.

As the person who implemented the technology transfer project from the beginning and has also worked for a long time in Vietnam's health and vaccine production industry, Prof. Nguyen Dang Hien noted another achievement: The project has helped Vietnam's National Regulatory Authority (NRA) meet WHO requirements.

"When the project started in 2002-2003, one of Japan's conditions was that the NRA of Vietnam must be recognized by WHO. The health organization has helped Vietnam improve its capacity. Thus, our vaccine industry is fully qualified: Our manufacturers meet WHO standards and vaccine regulatory agencies also meet WHO standards"

THE PINK HANDBOOK OF LOVE

The pilot maternal and child health handbook in Vietnam, developed with JICA's support, has been used in dozens of provinces, ranging from the plains to the mountains and ethnic minority areas. The handbook's usefulness in health care and its human value have been seen in a range of settings.

The handbook of a Hmong mother

Giang Thi Dinh, born in 1999 and a heavily pregnant mother from the Hmong ethnic group, went to Chi Ca Commune Health Station for a prenatal checkup. Chi Ca is a border commune of Xin Man district, Ha Giang province, a remote mountainous province in Vietnam's Northern border, primarily populated by Mong ethnic people. Dinh also carried Vang Thi Dang, her eldest daughter aged just over two years, born at the end of 2019, on her back. Dinh held two pink handbooks for her two children: the newer one was given by the Health Station to the unborn baby, and the older one was given to her when she was pregnant with Vang. Mice had chewed on one of its corners, but Dinh still kept it.

Medical staff at the Nan Ma commune, Xin Man district, Ha Giang province was giving instruction on how to use the Pink Handbook

Both handbooks contain information about Dinh's prenatal care visits, from the oldest to the youngest. Fortunately, the visits all turned out normal and healthy. The health exams of the older child are also recorded in the book with information about her weight, height, health status, etc. For every scheduled date for re-examination or vaccination, Dinh and her fellow pregnant women or women raising small children in the commune bring their Pink Handbooks to the health station.

Dinh is unable to read the Kinh language. Dinh can only understand a few spoken Kinh words, so she is frequently accompanied by her husband, Vang Seo Chu, on her prenatal care visits. Her midwife, Nguyen Thi Thu Phuong, listened to the fetal heart, measured Dinh's blood pressure, listened to her heart and lungs, and then wrote everything down in the handbook. Ms. Phuong also told her what to eat and how to rest. Complete information is also recorded in the older child's handbook each time she is vaccinated, weighed, or examined. At home, Vang Seo Chu will read and instruct his wife according to what the midwife and physicians at the Health Station advised.

After reading the handbook, I know how to care for my wife and that she needs to eat well in order to be healthy. My wife has had a handbook since her first child, so she is familiar with it. Every time my wife goes to the doctor, I remind her to bring the book, and when she gets home, I show her how to use it. The handbook is handy for me"

- **Vang Seo Chu**, born in 1996, Chi Ca commune, Xin Man district, Ha Giang province

"The Pink Handbook" is officially known as the "Maternal and child health handbook", which allows for continuous monitoring of the entire process from the time the mother is pregnant until the child is six years old. The handbook has a pink cover, inspired by a similar Japanese handbook. From 2011-2014, JICA supported the Ministry of Health to implement the Pink Handbook project in 4 pilot provinces, namely Dien Bien, Hoa Binh, Thanh Hoa, and An Giang.

The Pink Handbook includes adequate health monitoring tools such as prenatal checkup sheets, maternal and child health records, vaccination records, growth charts, and children's periodic health records.

There is a section in the handbook for medical staff or volunteers to make notes during visits and a section for the mother or family members to record important information about mother and baby care. Therefore, the handbook is meaningful not only in terms of its medical significance but also its sentimental value, as a diary full of maternal love about the entire growth

process of the baby, from pregnancy to the mother's health and baby's birth and development.

The handbook has made each visit more convenient for medical staff. Ms. Nguyen Thi Thu Phuong, a midwife at Chi Ca Commune Health Station, said: "Before this handbook, we had to use a different check sheet every time mothers went for prenatal checkups, and the same went for children's periodic health checks."

"After the checkup, we gave these sheets to the mothers, and we are not clear if they keep them. However, the Pink Handbook has made the process much more convenient; information is gathered more thoroughly, the mothers consciously keep the handbook, and pregnancy management for mothers has become much easier to handle," said Ms. Phuong.

"The same goes for childcare; there are pre-printed weight charts for babies. I can compare and find changes in the mother through the visits, as well as look at the growth chart to see how the child develops and advise on the mother's and child's diet."

JICA project helps reduce maternal and infant mortality

1st-Degree Specialist Doctor Le Thi Nguyet, who is currently working at the Thanh Hoa Center for Disease Control, receives and implemented JICA's project from the beginning. Therefore, she is well aware of the Pink Handbook's benefits: "The handbook helps to monitor the mother's whole pregnancy and follows the baby until the age of 6, demonstrating the families' and society's concern, as well as the family's ability to manage maternal and child health care."

Along with the Handbook, Ms. Nguyet said that the JICA project also added knowledge about health care, as well as organized training for health workers from the district, communal, village health centers, and public and private hospitals. Thanh Hoa is divided into 27 districts and 559 communes, and JICA's activities have been carried out extensively and regularly in all localities from 2011 to 2014.

Expected mothers were talking how to use the Pink Handbook at the Health station of Chi Ca commune, Xin Man District, Ha Giang province

Medical staff of Vinh Truong commune, An Phu district, An Giang province were giving the Pink Handbook to Champa mothers living in the commune

The Pink Handbook allows continuous monitoring since pregnancy till the child is 6 years old

Through JICA's maternal and childcare programs, including the Pink Handbook, we transmit knowledge to remote and isolated areas, including ethnic minorities. There are places where the volunteers help translate the information contained therein into minority languages. Before the Pink Handbook, they did not have much information about maternal and child health care"

- Mr. **Shimizu Akira**, Chief Representative of the JICA Vietnam Office

The Pink Handbook has reached mothers nationwide, including mountains and ethnic minority areas of Vietnam

Every month, prenatal visits and instructions on using the Pink Handbook are integrated with classes on nutrition for mothers and babies, and mother and childcare, including information on cooking porridge for children and breastfeeding, etc. Such courses are held regularly at medical stations, and every class is packed with young mothers and sometimes even fathers, Ms. Nguyet said. The project also provides clean birthing packages in mountainous areas where mothers cannot move to hospitals, allowing village midwives to assist mothers in giving birth on the highlands and in the mountains. These have been essential activities in remote areas for nearly ten years.

"Since the JICA program, we have found that maternal and newborn mortality has been reduced, and mothers' knowledge has been improved. The program has been running for many years with positive results, as demonstrated by the annual assessment of children's malnutrition rates," said Ms. Hoang Thi Oanh, an obstetrician and pediatrician at Thieu Hoa Town Health Station. "For example, a mother who gives their infant formula milk, after being consulted, understands the benefits of breastfeeding. They have changed their thinking about childcare."

Well aware of the changes brought about by the above activities, when the project ended and the funding was no longer available, Thanh Hoa province was still interested and added funds to maintain the activities for the purpose of improving mothers' knowledge. Some districts and communes also spend money for this activity, said Dr. Le Thi Nguyet. Furthermore, as people's knowledge expands over time, mothers become more aware of the importance of learning more about maternal and child health. However, despite the great demands of the people, the resources remain limited.

A consolation to the midwife

Since 2015, the Ministry of Health has encouraged the deployment of the Pink Handbook in medical stations, maternity hospitals, children's hospitals, and maternal and child health care facilities across the country by utilizing all available resources and fundraising.

Training on how to use the Pink Handbook for mothers at Trieu Hoa town, Thanh Hoa province. As one of the locals to implement the Pink Handbook 10 years ago, Thanh Hoa province now sees the widespread use of the book

According to the Ministry of Health, there have been 53 provinces adopting the Pink Handbook up to 2020, in which many of them have carried out the implementation across the provinces

With the help of organizations and businesses, the Ministry of Health has organized training courses and guided the development of a plan to deploy the Pink Handbook for health workers at the provincial level in 63 provinces and cities across the country, as well as provide handbooks for troubled areas. Like Thanh Hoa, many localities also actively structure their own funding in order to save resources for handbook implementation, grassroots health worker training, book printing, and the integration of communication activities in localities for Handbook communication.

According to Ministry of Health figures, by 2020, after more than ten years of Pink Handbook presence in Vietnam, 53 provinces and cities have been using Pink Handbooks, with many provinces adopting them on a province-wide basis.

The Department of Mother and Children's Health under the Ministry of Health stated that, in addition to maintaining and replicating the use of paper handbooks, the Department has worked to develop an electronic version of the Pink Handbooks, while also coordinating with other units to integrate the information into the V20 software system and personal health records.

The positive and humane meaning of JICA's Pink Handbooks has been spread and supported by local authorities and young families across all provinces.

However, while the Pink Handbook is relatively convenient in areas with a high population and good economic conditions, it is still challenging to implement the Pink Handbook in remote areas.

The story of the couple Giang Thi Dinh and Vang Seo Chu in Chi Ca is an example. Many people like them are unfamiliar with the Kinh language. As a result, it is difficult for parents to stay up to date and take notes. According to the Ministry of Health assessment, there are places where health workers have not been sufficiently trained and do not fully understand the importance and significance of the Pink Handbooks. Since the mother and family are unaware of the value and benefits of the Pink Handbooks, they do not have a positive attitude toward using them and do not have the habits of taking notes, keeping, and carrying them when visiting the doctor for a mother and child health check.

> *With the determination and efforts of the health sector and the love of the people when being fully informed about the importance and value of the Handbook, we hope that in the future, we will continue to get the companionship and cooperation of donors such as JICA, EU, World Bank and others, so that the implementation of the Handbook of the Ministry of Health at all 63 provinces and cities across the country can be promoted and maintained sustainably, and the handbooks are used for the right roles and purposes, and to bring benefits to the people and the health sector in Vietnam".*
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> (Report by the Department of Maternal Health and Children, Ministry of Health, December 4, 2021)

The consolation to midwives like Ms. Nguyen Thi Thu Phuong in Chi Ca is that, thanks to the staff's diligent work at this border commune health station, 95-96% of pregnant mothers in the commune use the Handbooks on a regular basis. Ms. Phuong noted that the use of Handbooks has become familiar. "There was a couple who asked that they had not received their Pink Handbooks, so I had to explain that I had given it to the village health worker. Some families bring their children here for vaccinations and are dissatisfied because others have Handbooks while they do not. If someone doesn't have a Handbook, they will actively ask for it," she said.

What's more, even though many Hmong women here, like Giang Thi Dinh, are still illiterate, their husbands are still willing to accompany their wives to the doctor to assist them in caring for the unborn baby and their children ●

Ms. Ly Thi Hanh, Nung people living in Nan Ma commune, Xin Man district, Ha Giang province, was talking with her mother on how to use the Pink Handbook

CONNECTING HEARTS

As a rehabilitation technician, Kawamura Hiroaki volunteered to work at Quang Tri General Hospital. Overcoming language barriers, life hardships and the pandemic, the volunteer wishes to help patients as much as possible and share many experiences with doctors in Vietnam.

In an inpatient room at the Rehabilitation Department of Quang Tri General Hospital, Japanese volunteer Kawamura Hiroaki helped patient Pham Thi Nga get her coat to prepare for practice. While working and sharing some small talks, Hiro knelt down on one knee to help Mrs. Nga put on her coat, then took a walking stick for her. He does everything very cheerfully and skilfully, outsiders may think they are mother and son. But Hiro – as nicknamed by all the medical staff and patients here – is a volunteer from Japan sent by JICA.

Hiro helped Mrs. Nga to reach the gym. The 70-year-old woman from Thanh Hoa, now living in Quang Tri, has had two strokes, the second one in May 2021. This year, she had 3 treatment and rehabilitation sessions at Quang Tri General Hospital with 34-year-old volunteer Hiro from Sapporo, Hokkaido, Japan.

Mr. Kawamura Hiroaki, a JICA volunteer, with his colleague at the General Hospital of Quang Tri, was supporting the patient with rehabilitation

Hiro massaged Mrs. Nga's arms and hands and showed her how to move her hands in many ways. "You have to relax," he said in Vietnamese, though he is not fluent. After the accident, patients who come here to practice rehabilitation become like children, they have to practice speaking again or practice the simplest movements and skills with their limbs.

"The way Hiro always applies acupressure for my mother and helps her practice walking has helped her improve more. My family considers him like family," said Mrs. Pham Thi Nga's daughter.

After practicing for Mrs. Nga, Hiro taught another patient to ride a bicycle. The patient's foot slipped from the pedal, and she seemed helpless with her paralyzed leg. Hiro helped lift the patient's foot and brought it back into position. With every patient, Hiro is considerate and jovial.

Hiro is one of the first JICA volunteers to come to Vietnam after almost a year of the Volunteer Program's interruption due to the Covid-19 pandemic. After testing and medical quarantine, Hiro went to Quang Tri General Hospital to work from March 18, 2021. All patients in the ward quickly got used to Hiro's presence and enjoyed his treatment.

"This is my first time going abroad to live and work, but the friendliness of the people in this country as well as the support of my Vietnamese colleagues make me feel very motivated. I've had a really good time here," Hiro said.

Having worked in rehabilitation for 11 years in Japan, upon coming to Quang Tri General Hospital, aside from examining and training patients at the Physical therapy department or going to the Intensive Care Unit for critically ill patients, Hiro also shared with his Vietnamese colleagues a lot of hís experiences and skills from Japan, such as rehabilitation techniques for acute stroke patients, the importance of early mobilization, how the Japanese health insurance system works, etc.

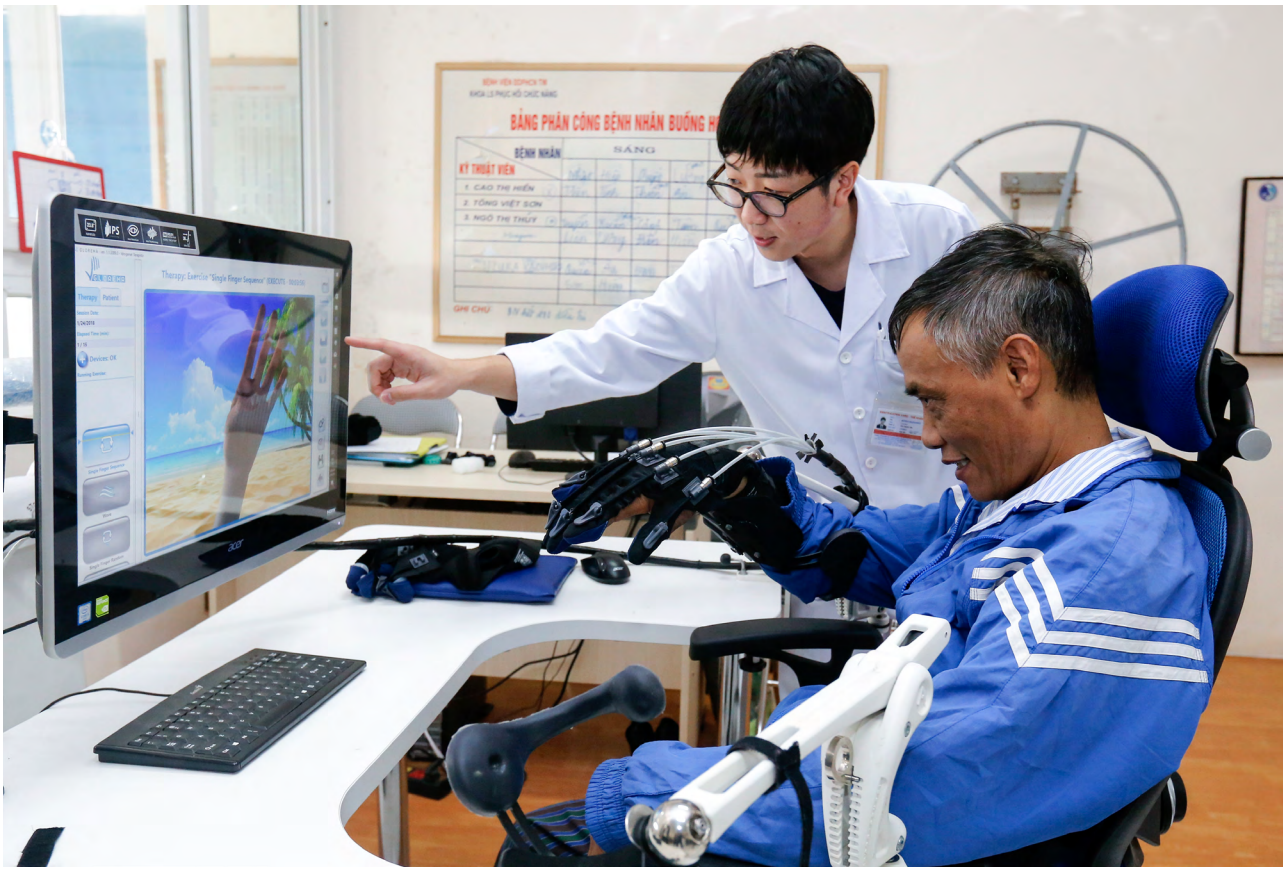
I love my job and the patients here. Whenever I meet them, I feel very happy. Everyone smiles when they meet me, which makes me feel excited to come to work. The support from my superiors and colleagues, from everyone makes me want to share a lot of my experiences from Japan"

- Volunteer **Kawamura Hiroaki**

The JICA volunteer dispatching program was launched in Vietnam in 1995. To this day, more than 700 Japanese volunteers have come to Vietnam, including young and senior volunteers. They work in dozens of provinces, including remote areas, in many fields: Teaching Japanese, healthcare, sports, culture and education, tourism, local development, agriculture, forestry and fishery, supporting industries, business administration, and contributing to human development and socio-economic development in Vietnam.

Dr. Phan Xuan Nam – Deputy Director of Quang Tri General Hospital – noted that Hiro has brought knowledge from advanced Japanese medicine, shared patient care procedures and specialized knowledge for patients to recover as soon as possible. This is the second time the hospital has welcomed a JICA volunteer, he said. "Patients love it when the volunteers come and look forward to having volunteers help them practice. Vietnamese doctors and technicians also learn a lot from the volunteers as well," Doctor Nam said.

Patients adore Hiro for his compassion and perseverance. A family member of a patient who had undergone 3 treatment sessions with Hiro revealed that in addition to the department's training schedule, Hiro also interacts with patients after hours, observe how they practice in the recovery room or comes to their bed to discuss and teach them how to exercise. There are patients who are mentally ill or suffer from collateral reactions, but Hiro remains accommodating.



Mr. Iizuka Kazuhiro, a JICA volunteer, is now working at the Nursing - Rehabilitation Central Hospital

In return, Hiro also finds much encouragement from everyone's sentiments. “I love my job and the patients here. Everyone smiles when they meet me, which makes me feel excited to come to work. I also receive support from my superiors and my colleagues, from people inside and outside the hospital, so I want to share as much of my work experience as possible here."

Hiro realized that, unlike Japan, the family is heavily involved in the rehabilitation of the patient, which is very important to the patient's life upon discharge. On the other hand, in Japan, patients are covered by health insurance for a longer treatment period than in Vietnam. Therefore, Hiro suggested that physiotherapists could guide the family to alter self-exercise methods and care methods upon seeing improvements so that the Vietnamese health system can yield better results.

> *The volunteer program helps us gather the support of people who are motivated to help and connect with others. The close relationship between the citizens of the two countries will make the relationship between us even stronger. The volunteer program has gained many positive results, especially at the local and front-line level, as volunteers helped develop the local communities and many of them want to welcome volunteers”*
>
> - Mr. **Shimizu Akira**, Chief Representative of the JICA Vietnam Office

Rehabilitation equipment made by JICA volunteers from available materials in Vietnam

Not only has he quickly integrated into work in Vietnam, but Hiro has also soon fallen in love with life here. Before coming to Vietnam, he only studied Vietnamese in Japan for about a month. He also tried Vietnamese dishes in Japan to get ready for the big move.

"Vietnamese is difficult, but I still try to learn and speak Vietnamese with colleagues and patients," he said. "It is not difficult for me to adapt to life in Vietnam when all my colleagues, friends and neighbors are very friendly."

There were also surprises, such as the dizzying number of motorbikes, or the Covid-19 pandemic that prevented Hiro from freely exploring Vietnam. But that didn't stop Hiro from finding happiness every day.

He didn't even have much time left to be homesick. Several patients, after their discharge from the hospital, still keep in contact, send greetings, thanking him, and informing him of their progress as they treat themselves. Others took videos and photos when they were practicing at home and sent them to him, and Hiro watched and guided them to adjust their movements. What Hiro does comes from not only the responsibility and obligation of being a medical worker, it also comes from sincere affection and a heart-to-heart connection ●

> *Vietnam was one of the first countries where Japan brought back volunteers after the Covid-19 pandemic. Over the past 26 years, the volunteer program in Vietnam has been very successful. As many Vietnamese people now come to Japan to work, volunteers returning from Vietnam continue to help those people with language or life integration"*
>
> - Mr. **Shimizu Akira**, Chief Representative, JICA Vietnam Office

Champa expected mothers at Vinh Truong commune, An Phu district, An Giang province in a training class on how to use the Pink Handbook


SỔ THEO DÕI
SỨC KHỎE BÀ MẸ VÀ TRẺ EM