HGPI

Health and Global Policy Institute

Immunization and Vaccination Policy Project

A Life Course Approach to Immunization and Vaccination Policy - Five Perspectives and Recommended Actions

Health and Global Policy Institute (HGPI)

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Introduction

Introducing Health and Global Policy Institute (HGPI)

Health and Global Policy Institute (HGPI) is a Tokyo-based independent and non-profit health policy think tank established in 2004. In its capacity as a neutral think-tank, HGPI involves stakeholders from wide-ranging fields of expertise to provide policy options to the public to successfully create citizen-focused healthcare policies. Looking to the future, HGPI produces novel ideas and values from a standpoint that offers a wide perspective. It aims to realize a healthy and fair society while holding fast to its independence to avoid being bound to the specific interests of political parties and other organizations. HGPI intends for its policy options to be effective not only in Japan, but also in the wider world, and in this vein the institute is very active in creating policies for resolving global health challenges.

Introducing HGPI's Immunization and Vaccination Policy Project

The World Health Organization (WHO) has stated that in terms of health, societal, economic, and educational impact, vaccination is the most cost-effective public health intervention. However, among people who do not or cannot receive vaccines, vaccine preventable diseases (VPDs) infect 1.5 million people worldwide every year. In Japan, there have been times when the public has taken an overly sensitive stance toward vaccination out of concerns for side effects, or when the Government reconsidered certain vaccination policies due to media reports and lawsuits. There have also been cases of vaccine hesitancy, which occurs when people refrain from seeking vaccinations or from having their children vaccinated. These have resulted in some members of the public not being provided with routine vaccinations on schedule. There have also been reports of VPD infections in Japan due to changes in the immunization system.

Japan's immunization strategy has been criticized for a "vaccine gap," where Japan had fewer types of vaccines available compared to other developed countries. However, signs of progress have begun to appear in recent years, and the number of vaccines available in Japan has been increasing since 2008. As of April 2020, among vaccines recommended by the WHO, the mumps vaccine was the only vaccine missing from Japan's routine vaccination schedule. In addition, discussions on the addition of herpes zoster vaccine and adsorbed diphtheria-purified pertussis-tetanus combined vaccine to the routine vaccination are ongoing and progress on related policies is anticipated.

Although Japan has made definite strides in immunization policy, lawsuits and media reports on adverse reactions to vaccinations have had significant impacts on policy. A 1994 vaccination policy revision changed "mandatory" vaccines to "recommended" vaccines in response to an appellate court decision after patients and their families seeking compensation for damages won a class action lawsuit against the Government in Tokyo. More recently, lawsuits and reports related to the human papillomavirus (HPV) vaccine resulted in the reconsideration of various immunization promotion measures.

With vaccine hesitancy becoming a prominent trend worldwide, this is a problem Japan can no longer ignore. Especially in regards to the current global threat, Coronavirus Disease 2019 (COVID-19), focus is narrowing in Japan and abroad on vaccine development periods as well as on global vaccine provision methods, allocation and equity in vaccination, responses to adverse events, and transparent and rapid methods for achieving public consensus on vaccines in advance. One consequence of the COVID-19 pandemic observed was reduced vaccination rates for Japanese encephalitis, pediatric pneumococcal, and measles and rubella. Given the current circumstances, it is now more important than ever before that multi-stakeholders, including representatives from civil society, engage in open and constructive discussions to promote vaccine policies and reach a national consensus.

It is particularly important that a system is established in which vaccinations are provided over the life course to all. This means vaccinating children, elderly people, and pregnant women; providing catch-up vaccinations to those who were not properly vaccinated on schedule due to past policy changes; and implementing vaccination measures specifically aimed at adults and elderly people, a topic that has received worldwide attention in recent years. Anticipation is high for progress on vaccination policies that address these needs.

In response to these issues, this project gathered opinion leaders and related organizations from industry, Government, academia, and civil society in the field of immunization and vaccination to form an advisory board. That advisory board identified issues and indicated the direction of solutions regarding immunization and vaccination, including the value created by vaccines in normal times and during emergencies; the best ways of communicating the value of vaccines; the importance of a life course approach to vaccination, to target people of all ages; and best methods for approaching unvaccinated generations. We also held expert meetings to hold repeated discussions on the need for progress in immunization and vaccination policy and to examine achievable policy options.

■ Advisory Board (Titles omitted; in alphabetical order)

- **Kyoko Ama** (Former Representative, Ippan Shadan Hojin Shiro Shoni Iryo Mamoro Kodomo-tachi no Kai; Board Member, Japan Patient Support Research Organization)
- **Hidenori Arai** (President, National Center for Geriatrics and Gerontology; Vice President, The Japan Geriatrics Society)
- **Satoshi Iwata** (Department of Infectious Diseases, National Cancer Center Hospital; Visiting Professor, Department of Infectious Diseases, Keio University School of Medicine; Chairperson, The Expert Council on Promotion of Vaccination)
- **Isao Miyairi** (Medical Director, Department of Infectious Diseases, National Center for Child Health and Development)
- **Kuniko Nakayama** (Director, My Family Clinic Gamagori, Medical Association Mefa Jinaikai)
- **Leon Ochiai** (Head, Public Relations Division, Responsible for Vaccine, Sanofi K.K.)
- **Nobuhiko Okabe** (Director General, Kawasaki City Institute for Public Health)
- **Akihiko Saitoh** (Professor, Department of Pediatrics, Graduate School of Medical and Dental Sciences, Niigata University)
- **Akinori Sugaya** (Head Physician, Sugaya Children's Clinic; Director, KNOW VPD Protect Our Children)
- **Mugen Ujiie** (Director, Travel Clinic; Director, Immunization Support Center, Disease Control and Prevention Center, Center Hospital of the National Center for Global Health and Medicine (NCGM))

■ Special Advisors (Titles omitted; in no particular order)

- **Noriko Furuya** (Member, House of Representatives; Acting Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention)
- **Ichiro Kamoshita** (Member, House of Representatives; Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention)
- **Keizo Takemi** (Member, House of Councillors; Goodwill Ambassador for UHC, World Health Organization)
- **Kiyoshi Kurokawa** (Chairman, Health and Global Policy Institute)

Please note that affiliations and positions listed above are basically those from the time of our project meetings and may differ from current affiliations and positions.

Overview of Statements Released and Discussions Held at Advisory Board Meetings, Expert Meetings, and Other Meetings

August 7, 2020

First advisory board meeting held

- Discussion on the foundation of future discussions on Japan's vaccine policy held

September 7, 2020

Recommendations from special advisors presented

- "Proposal on a Global Procurement System for Coronavirus Disease 2019 (COVID-19) Vaccines" presented

September 15, 2020

Second advisory board meeting held

- Discussion held on rebuilding immunization and vaccination policy to reflect the life course

November 10, 2020

Third advisory board meeting held

- Discussion held on three topics related to an immunization and vaccination database: 1) data collection methods; 2) data comparison and sharing when using multiple databases; and 3) evaluating collected data

December 18, 2020

"The Global Expert Meeting on the Way Forward for a Life Course Approach to Immunization and Vaccination Policy" held

- "The Way Forward for a Life Course Approach to Immunization and Vaccination Policy – Summary of Discussion Points" presented

February 19, 2021

Fourth advisory board meeting held

- Discussion held on communication strategies for promoting public understanding and awareness

Concerning the positioning of “A Life Course Approach to Immunization and Vaccination Policy – Five Perspectives and Recommended Actions” and future activities

Based on discussions held with multi-stakeholders including experts and representatives from civil society, the parties most affected, businesses, and the administration, HGPI compiled the current version of this proposal by examining what content to include from a neutral standpoint with the intent of capturing the immunization and vaccination policy that will be deemed most desirable by the public. Moving forward, we will have repeated opinion exchanges with a broader variety of multi-stakeholders based on this proposal to deepen discussions in this field and make progress on policy in this domain.

In the future, the aim of this project will be to function as a platform for achieving better immunization and vaccination policy in Japan by bringing together various stakeholders while referring to international best practices for the perspectives in this proposal. In particular, the novel coronavirus SARS-CoV-2, which was declared a pandemic by the World Health Organization (WHO) on March 11, 2020, has had an enormous impact on immunization and vaccination policies, and many discussions on the topic are still ongoing. In addition, discussions being held before the global spread of Coronavirus Disease 2019 (COVID-19) on topics like the Basic Plan on Immunization had to be put on hold so focus could turn to responding to the coming pandemic. Fundamental discussions and significant progress on items such as the Government’s response to the COVID-19 pandemic and the roles expected of the national Government, local governments, businesses, the media, academia, and the public during such emergencies are anticipated in the years to come. HGPI will continue holding discussions that encompass the perspectives of stakeholders in various situations with the aim of contributing to change through our activities. We welcome all readers to actively share their opinions on this proposal and encourage them to get involved.

Executive Summary

Of the various life stages such as infancy, early childhood, childhood, puberty, adolescence, adulthood, and old age, immunization and vaccination policies in Japan have focused on infancy, early childhood, and childhood. These policies have contributed to better health and quality of life for the public. However, scientific evidence has been gathered from around the world that a life course approach to vaccination that takes all life stages into account can help maintain public health and generate socioeconomic benefits. Broader vaccination coverage can also help control the spread of communicable diseases and protect unvaccinated people.

In response to the pandemic caused by the novel coronavirus SARS-CoV-2 in 2020 and 2021, it is very important that we discuss immunization and vaccination policies that are based on a life course approach. Infectious diseases have threatened people's lives throughout history. Recent examples include epidemics of rubella and congenital rubella syndrome that occurred in Japan in 2018 and 2019. Among imported infectious diseases, there was also a measles epidemic. It is likely these epidemics could have been prevented if vaccines had been provided to the public at every life stage. Japan has high vaccination coverage for routine vaccinations among infants, but rates are lower for voluntary vaccinations among adolescents and older groups. Vaccine hesitancy is said to be one cause for this. Vaccine hesitancy occurs when someone with access to vaccines hesitates or refuses to be vaccinated. It is believed to have occurred in Japan as the result of past media reports on adverse events after vaccinations and the Government's responses to those events.

Many countries around the world are in the midst of vaccinating to fight the SARS-CoV-2 pandemic. Large-scale and rapid immunization and vaccination policies have already helped certain countries successfully reduce deaths and severe cases of COVID-19 infections. If we can overcome this pandemic using these new types of vaccines, which were developed and approved with unprecedented speed in the history of medicine, it is highly likely that public confidence in immunization and vaccine policy will improve and that discussions on the role of vaccines in society and throughout the life course will progress.

Based on this policy vision, this proposal summarizes the current status of Japan's immunization and vaccine policy, organizes issues related to those policies, and provides specific recommendations for improvement from five perspectives. Our recommendations were developed using as broad a range of viewpoints as possible, centered around discussions held in FY2020 at HGPI's Immunization and Vaccination Policy Project advisory board and at global expert meetings with third party experts from Japan and abroad. In the future, based on this proposal, we will continue gathering opinions from a large number of stakeholders and deepen collaboration with our special advisors, who are lending their support to see our recommendations implemented into policy. These activities will help us narrow our focus to specific agendas according to international trends and allow us to pursue our plans of repeatedly issuing statements and recommendations that will contribute to better health and literacy for all.

Perspective 1 – Immunization and vaccination policies based on a life course approach should be advanced.

1. Eligibility requirements for routine vaccinations should be expanded to cover people with certain underlying medical conditions and risk factors so high-risk individuals can receive the benefits of vaccination.
2. Special measures should be taken that expand catch-up vaccinations among unvaccinated people or people who have lived abroad and that reduce the cost burden on people who receive catch-up vaccinations.
3. To improve access, more facilities should be allowed to provide vaccinations.
4. Steps to offset the cost burden of vaccinations should be considered. These may include establishing progressive out-of-pocket payment rates by income bracket, granting public health insurance coverage, or revising the medical service fee schedule.
5. Methods of managing individual vaccination records should be reviewed, individual vaccination records over the life course should be made viewable, and those records should be sharable among municipalities.

Perspective 2 – Dissemination, awareness-building, and communication strategies that target healthcare professionals and the public should be created.

1. Departments responsible for science and risk communication should be established, and efforts should be made to promote the dissemination of and awareness-building for immunizations and vaccinations by providing appropriate information at appropriate times.
2. Training systems should be introduced and best practices should be shared with the goal of improving awareness and literacy among healthcare professionals.

Perspective 3 – To achieve science-based policy decision making and evaluation, steps should be taken to promote the creation of a system that analyzes and shares the epidemiological effects of vaccinations by linking vaccination practices with information systems that track outbreaks of targeted diseases.

1. The systems for gathering information and managing vaccination ledgers should be revised and a joint platform that is useful to healthcare professionals and municipalities, who are the parties responsible for entering registry information, should be built.
2. An information registration system for accurately recording individual vaccination histories and that makes effective use of medical IDs and other such tools should be built.
3. Steps should be taken to make information on adverse events viewable by revising the information utilization system for evaluating vaccinate effectiveness and safety.
4. A unified evaluation system for the collection and analysis of adverse event information should be built.

Perspective 4 – Steps should be taken to create a system that enables multi-stakeholders to hold continuous discussions on vaccine policy.

1. The public and specialist organizations should be invited to participate in efforts to foster social consensus.
2. Protective measures should be developed to guard against biased, alarmist disinformation or medical misinformation.

Perspective 5 – Investments should be accelerated in immunization policies that address both non-emergency and emergency situations and anticipate future vaccine demand.

1. Special approval processes that reflect the significance of vaccination during public health crises must be established. A system that remains operational during non-emergencies must be built for distributing vaccines, selecting targeted groups for vaccination, and assigning vaccination priorities.
2. A domestic R&D and provision system for vaccines must be established.

❖ Perspective 1 – Immunization and vaccination policies based on a life course approach should be advanced.

The life course approach is a movement to rethink vaccination as a form of public health intervention for all ages rather than one focused on infancy, early childhood, and childhood. A life course approach is also recommended in the global roadmap presented by the WHO in the Immunization Agenda 2030 (IA2030) in 2020. This recommendation is based on the belief that vaccination is an extremely effective method for protecting people's health during all life stages and situations rather than just during infancy. The life course approach will also be useful in achieving the future for society that Japan envisions for the "Era of the 100-year Lifespan" and in enabling the public to enjoy active, healthy longevity. Vaccines have also been shown to protect the people around the person who is vaccinated, which means they not only benefit the individual but also the groups to which they belong. At the same time, there are challenges with the life course approach which will require the following five actions to overcome.

1. **Eligibility requirements for routine vaccinations should be expanded to cover people with certain underlying medical conditions and risk factors so high-risk individuals can receive the benefits of vaccination.**

   The Immunization Act categorizes vaccinations into three types: routine vaccinations, temporary vaccinations, and new temporary vaccinations. Routine vaccinations target two classes of diseases, category A and category B. Vaccinations for category A diseases are carried out with a view toward mass prevention, while those for category B diseases are mainly provided for individual prevention with the aim of protecting high-risk individuals. While eligibility for routine vaccinations for category A diseases is determined by age, eligibility for vaccinations against category B diseases is determined by age and organ function. Category B diseases include influenza and pneumococcal infectious diseases among elderly people. Although academic societies and similar organizations have issued recommendations on the provision of coverage for people with underlying medical conditions like cardiac or respiratory diseases or occupations that face certain risk factors, they have not been included as category B diseases. As a result, vaccines targeting category B diseases are limited and insufficient in number. From the perspective of individual prevention for high-risk people, category B diseases should be expanded to cover a more diverse population. Measures to achieve this will require consideration and may include amending laws or taking steps to secure funding.

2. **Special measures should be taken that expand catch-up vaccinations among unvaccinated people or people who have lived abroad and that reduce the cost burden on people who receive catch-up vaccinations.**

The Immunization Act sets vaccination periods for diseases eligible for routine vaccination. Within those periods, even people who are outside of the age ranges specified in the Act can receive full or partial coverage for vaccinations through public funding. Also, people who were unable to be vaccinated due to illnesses requiring long-term medical treatments are eligible for routine vaccinations within two years of recovery. However, when a vaccination is provided outside of the vaccination period, or when someone chooses to be vaccinated outside of the vaccination period for personal reasons, it is treated as a voluntary vaccination. In such situations, the person being vaccinated must cover the cost out of pocket. Vaccinations provided to make up for delays in vaccination timing are called catch-up vaccinations, and it is likely that vaccination coverage will increase the longer these catch-up vaccinations are granted cost reductions. Therefore, special measures to provide catch-up vaccinations at public expense should be expanded and amendments to relevant laws and regulations should be considered.

3. **To improve access, more facilities should be allowed to provide vaccinations.**

The Guidelines for the Implementation of Routine Vaccination provide two methods of conducting vaccinations: individual vaccinations at healthcare institutions and mass vaccinations at suitable facilities. In principle, the Medical Service Act does not permit vaccinations outside of healthcare institutions. However, access is likely to improve if options for providing vaccinations outside of healthcare institutions are permitted if certain conditions are met, such as those for providing mobile medical services. Specific options to increase vaccination sites include combining vaccinations with health checkups or providing vaccinations at pharmacies, like in other countries. However, laws such as the Pharmacists Act and the Immunization Act will require revisions before it is possible for pharmacists and other medical personnel to provide vaccinations. Improvements to the training system will also be necessary. It may be possible to pair health checkups and vaccinations by developing a suitable system after considering revisions to laws such as the Industrial Safety and Health Act and the Immunization Act.

4. **Steps to offset the cost burden of vaccinations should be considered. These may include establishing progressive out-of-pocket payment rates by income bracket, granting public health insurance coverage, or revising the medical service fee schedule.**

In addition to the steps to improve vaccine access described above in section 3, it is likely that expanding financial assistance will also contribute to better vaccination coverage. This is based on the belief that out-of-pocket cost burden affects vaccination coverage. For example, it is said out-of-pocket payments are one of the hurdles that cause low vaccination coverage among elderly people for influenza and pneumococcal infectious diseases, which are category B diseases in the vaccine schedule. Establishing progressive out-of-pocket payment rates according to income brackets should be considered as a method of improving vaccination coverage. Anticipation is also high for steps to consider the option of covering those costs through public healthcare services within the universal healthcare system. In that event, revisions to the medical service fee system should also be considered.

5. **Methods of managing individual vaccination records should be reviewed, individual vaccination records over the life course should be made viewable, and those records should be sharable among municipalities.**

Vaccination ledger management is left to municipalities, special wards, and other local governments, and these records are not managed in an integrated manner across municipalities or regions. This makes it difficult to identify unvaccinated people or to track vaccination histories when people eligible for vaccinations move from one municipality to another. The data managed by each municipality is compiled by public health centers and reported to the prefectural and national governments. In 2014, a framework to allow people to check their vaccination history online was discussed in the Basic Plan on Vaccination. Although this framework is currently being developed, this plan has yet to be realized. In 2020, the Headquarters for Japan's Economic Revitalization presented their Immunization Roadmap at the Nonstop Working-Level Meeting on Child Rearing which mentioned data standardization and similar topics. However, those discussions did not reach a conclusion. To improve vaccination coverage across all generations, a record management system should be developed that takes life events such as relocation across regions into account and that transcends regional boundaries. To achieve this, it will be important to revise the Immunization Act and to obtain public understanding of the benefits of allowing the Government to manage vaccination records using a common format.

❖ Perspective 2 – Dissemination, awareness-building, and communication strategies that target healthcare professionals and the public should be created.

The Basic Plan on Immunization requires the national Government, municipalities and special wards, healthcare institutions, related academic societies, and the media to engage in communication from their respective perspectives based on the latest evidence. Hesitating or refusing to be immunized even when a vaccine is available is called vaccine hesitancy. Communication is considered one tool for addressing vaccine hesitancy, but some have pointed out that poor quality communication may hinder efforts to raise vaccine acceptance. We can look to the HPV vaccine as an example. The HPV vaccine was administered by obstetricians and gynecologists in addition to internists and pediatricians, but it was physicians of other specialties who had to treat the various symptoms people experienced after vaccination. Some say it was impossible to mount an adequate response because each physician was treating a different group of patients. It is not only important for the Government and companies to ensure information on vaccine effectiveness and safety is high quality; it is also important for stakeholders like the local governments that administer vaccinations, parties involved in education and awareness-building, and Government agencies (the Government, the Ministry of Health, Labour and Welfare (MHLW), the Ministry of Education, Culture, Sports, Science and Technology (MEXT), and local government officials) to discuss how to best communicate vaccine risk in a unified manner. Achieving this will require the two efforts described below.

1. **Departments responsible for science and risk communication should be established, and efforts should be made to promote the dissemination of and awareness-building for immunizations and vaccinations by providing appropriate information at appropriate times.**

   Vaccination has been demonstrated to be a cost-effective form of primary prevention. However, to ensure society makes effective use of vaccination, the public must be provided with scientifically sound information in a manner people can understand. To achieve this, it will be necessary to establish a government department to be responsible for disseminating reliable information and for conducting risk communication, and for them to provide appropriate information at the appropriate times to the groups being addressed. It is also urgent that a system is created for science communication and risk communication, which would allow for activities like briefing the public and the media on inaccurate information. Public outreach from healthcare professionals and local government representatives will also be important. The effective use of online tools by healthcare specialists, organizations specializing in healthcare, local governments, and other such parties is likely to help promote public understanding. Rather than sending out uniform messages addressed to the general public, however, it will be important to carefully select which form of media to use according to the targeted age group, to customize the content of each message, and to make preparations for bilateral communication. Methods of creating more opportunities for people to see or hear about vaccines in their everyday lives should also be considered. We should also be aware of the need to ensure vaccine recipients are given valid vaccine information at various life stages and occasions in that process.

2. **Training systems should be introduced and best practices should be shared with the goal of improving awareness and literacy among healthcare professionals.**

The need to improve awareness and literacy among healthcare providers, who are the parties responsible for administering vaccines, has been recognized as an issue. Healthcare professionals play key roles in promoting and raising awareness toward vaccination. However, in order for them to be able to promote and raise awareness toward vaccination based on a life course approach, medical associations and academic societies should help a broad range of healthcare professionals build experience and improve their understanding by providing training opportunities, introducing a certification system, assigning credits when medical specialists apply for license renewals, and including vaccination in clinical resident and medical specialist training. The sharing of best practices among physicians and healthcare institutions who are actively working to increase vaccination coverage at the local level is also likely to be effective.

❖ Perspective 3 – To achieve science-based policy decision making and evaluation, steps should be taken to promote the creation of a system that analyzes and shares the epidemiological effects of vaccinations by linking vaccination practices with information systems that track outbreaks of targeted diseases.

Since vaccinated people cannot say when an infection has been prevented by a vaccine they received, the effects of vaccines must be evaluated epidemiologically. One measure for accurately tracking and analyzing information on infectious disease outbreaks outlined in the Act on the Prevention of Infectious Diseases is the National Epidemiological Surveillance of Infectious Diseases (NESID) program. However, a sufficient system which allows results from NESID to be utilized promptly at the national level has yet to be created. Therefore, the Government should expand and link the national registry (where information on vaccinations is registered) and the surveillance system (a disease prevention system for accurately and continuously identifying and tracking outbreaks of diseases covered by vaccinations). This will result in a system that can readily evaluate epidemiological data on vaccination practices and disease outbreaks. Rapidly provided data obtained with this system to the public and medical personnel will also be important. Digitizing and centralizing vaccination records will also enable the vaccination surveillance system to accurately grasp information on vaccinated people. To improve vaccine reliability, it will also be essential to regularly monitor vaccination effectiveness. This can be achieved by expanding the functions of the infectious disease surveillance system and linking that system to the immunization system. Furthermore, to utilize data, a cross-organizational, collaborative system that links vaccination and infectious disease data should be established. To achieve these goals, the following four initiatives will be necessary.

1. **The systems for gathering information and managing vaccination ledgers should be revised and a joint platform that is useful to healthcare professionals and municipalities, who are the parties responsible for entering registry information, should be built.**

   As the parties responsible for implementing vaccination programs, local governments are required to manage and maintain vaccination ledgers for five years. However, there are no systems to coordinate the sharing of information among local governments or to ensure data consistency. Public health centers are responsible for compiling data from local governments and providing it to municipalities, including special wards, but there is no common foundation to serve as a platform for information sharing. This means it is difficult for local governments to provide real-time reports to public health centers. Information management systems need to be digitalized, but there are also challenges to improving efficiency for the people who enter information into the system at healthcare institutions and local governments. If a platform can be built, it will become possible to identify unvaccinated people and track vaccination histories when people eligible for vaccinations move from one municipality to another. Therefore, a system that can be linked to initiatives such as the information provision and disclosure system (the My Number Portal) should be designed while reflecting opinions from healthcare institutions and local governments, the necessary investments should be made, a budget for educating healthcare professionals and local governments should be secured, and the Immunization Act and related laws obligating local governments to manage vaccination programs should be revised.

2. **An information registration system for accurately recording individual vaccination histories and that makes effective use of medical IDs and other such tools should be built.**

It is essential that an information system is created which can track individual vaccination histories, take various life events such as moves and name changes into account, and serve as the foundation for promoting immunization policies based on the life course. To promote said policies, it is desirable a system is created in which individual vaccination histories are recorded through a common information sharing platform such as the My Number Portal where people including those who move to different municipalities can be tracked by the parties responsible for implementing vaccination programs, namely local governments and healthcare professionals. Anticipation is also high for the use of personal identification information that is linked to the social security and tax systems such as My Number to build a national registry. The Act on the Use of Numbers to Identify a Specific Individual in Administrative Procedures (the "My Number Act"), the Immunization Act, and other applicable laws should be revised so a system that enables the use of the information contained in that national registry, including personal identification information, can be developed for surveillance and similar purposes.

3. **Steps should be taken to make information on adverse events viewable by revising the information utilization system for evaluating vaccinate effectiveness.**

It is important to build a registry and use registry information effectively so that vaccine effectiveness can undergo scientific evaluation. Three elements must be kept in mind to determine vaccine effectiveness: the vaccinated person, the infectious disease, and reactions post-vaccination. Epidemiological information such as immunity acquisition among vaccinated individuals and infectious disease prevalence is needed to determine vaccine effectiveness, so primary prevention effects must be made visible. Regarding adverse events, the FY2012 revision of the Immunization Act requires the physician who administered the vaccine to submit a report through the adverse event reporting system when targeted symptoms are observed. These reports are used to collect information on adverse events and symptoms suspected to be caused by vaccine side effects that occur after vaccination. Deliberation councils then create individual measures for each type of adverse event and other post-vaccination event. However, it is difficult to say that those measures have a uniform scientific basis. To relieve any concerns of the public, it is desirable that a Vaccine Adverse Event Reporting System which can scientifically evaluate vaccine effectiveness is built and operated in a flexible manner.

4. A unified evaluation system for the collection and analysis of adverse event information should be built.

The main drawbacks to the current surveillance system are the spontaneous nature of reporting and its reliance on passive surveillance, which requires healthcare providers to take initiative when reporting adverse events or symptoms suspected to be adverse reactions. It will be difficult to assess vaccine safety and effectiveness in a rapid and objective manner using only the existing passive surveillance systems. With the current system, there are times when discussions must be held in a manner that can be influenced by speculation or reporting bias, which occurs when certain bits of information are revealed or suppressed. Accurately evaluating adverse events requires information on unvaccinated people, and health authorities need active surveillance to access that information. Therefore, the creation of a system that provides active surveillance and is designed with the intent to enable transparent discussions should be considered. This is likely to require revisions to the Immunization Act that make it easier to access information, such as the total number of adverse reactions, or to conduct comparison between vaccinated and unvaccinated populations.

❖ Perspective 4 – Steps should be taken to create a system that enables multi-stakeholders to hold continuous discussions on vaccine policy.

To advance initiatives based on Perspectives 1 to 3 above, public understanding and consensus regarding the effectiveness and safety of immunization and vaccination will be essential. It is important that effectiveness is evaluated from multiple perspectives. In addition to benefits such as reduced disease incidence and mortality, the impact vaccines have on health by preventing severe cases and the benefits they have on the economy and society must also be considered. Another reason the value of vaccines must be measured with multiple criteria is because vaccination over the life course carries significant benefits in terms of allowing people to maintain social activities. For example, people who can maintain Activities of Daily Living (ADL) can keep working or caring for family members. While clearly defining the Government's role in protecting the lives and health of the public, correct understanding and awareness must be fostered at the individual level to create a society in which people can make decisions based on scientific evidence. Achieving this will require the two efforts described below.

1. **The public and specialist organizations should be invited to participate in efforts to foster social consensus.**

   Building social consensus is essential for advancing immunization policy. Building common understanding takes time. In addition, to build a system for information management, to educate and build awareness among healthcare professionals, and to implement communication strategies as discussed in Perspective 2, it will be necessary to first create a system that enables the national Government, local governments, relevant academic societies, and other specialist organizations to engage in continuous discussions on immunization and vaccination policy. When defining the role of vaccination over the life course in Japan, there are certain expectations that must be placed on the public. These include being partially responsible for communication strategies and being involved in designing systems. To achieve this, it is desirable that a system is established for continuous multi-stakeholder discussions with long-term perspectives.

2. **Protective measures should be developed to guard against biased, alarmist disinformation or medical misinformation.**

   The spread of disinformation or medical misinformation regarding vaccination throughout society carries the risk of increased vaccine hesitancy and may cause significant loss. Defensive measures are needed to prevent such information from being amplified. To help achieve that, the Government is expected to share up-to-date, easy-to-understand information and healthcare professionals are expected to promote public understanding by providing careful explanations in care settings. The media and the public are also expected to play certain roles. Anticipation is high for progress on a system for providing information to the media, the creation of guidelines on terminology and expressions for the media, and third-party evaluation of news report content. In addition, to broadly disseminate knowledge regarding vaccines, elementary and junior high school students should be taught about vaccine effectiveness and safety as part of compulsory education, while adolescents and older students should be taught about these subjects during civic education.

❖ Perspective 5 – Investments should be accelerated in immunization policies that address both non-emergency and emergency situations and anticipate future vaccine demand.

All stakeholders involved in vaccine research and development, policy making, and implementation must understand and be able to respond to the various requirements that vaccines must meet in the policy decision-making cycle. In particular, the domestic vaccine industry has been late to respond to Coronavirus Disease 2019 (COVID-19). Although the Government is working as fast as possible to vaccinate the public against COVID-19, it is still difficult for people to return to life as normal. More experts should be involved in vaccine policy and a more efficient, cross-ministerial decision-making system should be established. In 2007, the MHLW formulated the Vaccine Industry Vision as a cross-departmental vision for the Economic Affairs Division and Research and Development Division of the Health Policy Bureau, the Tuberculosis and Infectious Diseases Control Division of the Health Service Bureau, and the Blood and Blood Products Division and the Pharmaceutical Evaluation Division of the Pharmaceutical and Food Safety Bureau. Based on that Vision, the Government should make preparations during non-emergencies to ensure vaccine research and development undertaken as a crisis management measure can proceed rapidly during emergencies. Anticipation is high for the Government to provide regular support for R&D for infectious disease control technologies and collaboration among industry, academia, and Government in those efforts; to demonstrate to companies that there is a biopharmaceutical market where they can utilize those technologies and reliably forecast the minimum necessary revenue; to incentivize companies to make the necessary investments in R&D and production; and to provide for the execution of investments in R&D that will also cover rapid clinical development during emergencies. Third-party evaluations of policies implemented in response to COVID-19 and discussions on the best methods of allocating resources, developing laws, and providing assistance to the private sector are also needed.

1. **Special approval processes that reflect the significance of vaccination during public health crises must be established. A system that remains operational during non-emergencies must be built for distributing vaccines, selecting targeted groups for vaccination, and assigning vaccination priorities.**

   COVID-19 has led to widespread recognition of the significance of vaccines during pandemics. At the same time, it is extremely important to build systems to prepare for public health crises and that anticipate emergencies during normal times. To prepare for future pandemics, discussions should be held on vaccination policies for public health crises. The special approval of vaccines is governed by the Act on Securing Quality, Efficacy and Safety of Products Including Pharmaceuticals and Medical Devices, while vaccinations are governed by the Immunization Act and the Quarantine Act. These laws and their accompanying systems must be examined to ensure that effective responses can be made for future emerging infectious diseases.

2. A domestic R&D and provision system for vaccines must be established.

During the SARS-CoV-2 pandemic, Japan has not been able to develop or supply vaccines domestically. There is no guarantee that stable supplies of vaccines from other countries will be available during future pandemics. Discussions should be held on establishing an R&D and supply system with a long-term perspective, and such a system should be established as soon as possible. The supply chain during emergencies, the ideal structure of the vaccination provision system, and publicly-funded vaccinations should be sufficiently verified and revised from the perspective of health security.

Brief Biographies of Advisory Board Members and Special Advisors

Advisory Board (Titles omitted; in no particular order)

Kyoko Ama (Former Representative, Ippan Shadan Hojin Shiro Shoni Iryo Mamoro Kodomo-tachi no Kai; Board Member, Japan Patient Support Research Organization (JPSO))

Ms. Kyoko Ama graduated from a junior college in Tokyo, where she completed a Japanese language teacher training course. She started her career as a Japanese language teacher in Japan and Malaysia. After returning to Japan, she became engaged in international exchange and cooperation activities at the Society for Promotion of Japanese Diplomacy (SPJD). Later, she operated a restaurant with her husband.

In April 2007, she established Ippan Shadan Hojin Shiro Shoni Iryo Mamoro Kodomo-tachi no Kai, an organization that aimed to reduce anxiety among parents and to lessen the burden placed on healthcare workers by educating people on the effective use of healthcare resources. She served as representative of the organization until it was dissolved at the end of April 2020, when the MHLW decided to implement regional initiatives to educate the public on the effective use of healthcare resources as a project in maternal and child health. She then began independent activities aiming to improve healthcare through civic engagement in May 2020.

Hidenori Arai (President, National Center for Geriatrics and Gerontology; Vice President, The Japan Geriatrics Society)

Dr. Hidenori Arai graduated from Kyoto University's Faculty of Medicine in 1984, where he also received his Doctor of Medicine degree in 1991. In 2003, Dr. Arai became a lecturer of aging medicine at the Kyoto University Graduate School of Medicine. There, he was appointed Professor in the Department of Human Health Sciences in April 2009. After that, he assumed the office of Deputy Director of National Center for Geriatrics and Gerontology from January 2015, where he was appointed Director of the Center for Gerontology and Social Science later that year in April. He was appointed Director of the National Center for Geriatrics and Gerontology in April 2018 and President in April 2019. In addition to the above, he has also served as Chairman of the Japanese Association on Sarcopenia and Frailty, Vice President of the Japan Geriatrics Society, President of the Japan Gerontological Society, and as a Board Member of the Japanese Society of Geriatric Pharmacy. His specialties are geriatrics, frailty, and sarcopenia.

Akinori Sugaya (Head Physician, Sugaya Children's Clinic; Director, KNOW VPD Protect Our Children)

Dr. Akinori Sugaya graduated from the Faculty of Medicine at Keio University School of Medicine. In 1982, he began serving as a doctor in the Department of Pediatrics at Keio University School of Medicine. In 1984, he entered the Department of Pediatrics at Shizuoka City Shimizu Hospital. He became a clinical fellow at the Department of Pediatrics at Tokyo Metropolitan Ohtsuka Hospital in 1987 and the head doctor of the department in 1995. He became head doctor of the Cardiology Department at Tokyo Metropolitan Kiyose Children's Hospital in 2002. He opened Sugaya Children's Clinic in 2005. He was appointed Director of NPO KNOW VPD Protect Our Children in 2013 and Chief Director in 2017.

Satoshi Iwata (Department of Infectious Diseases, National Cancer Center Hospital Visiting Professor, Department of Infectious Diseases, Keio University School of Medicine Chairperson, The Expert Council on Promotion of Vaccination)

Dr. Satoshi Iwata graduated from the Faculty of Medicine, Keio University School of Medicine in 1976. In that same year, he joined the Department of Pediatrics at the School of Medicine at Keio University as a physician. In 1996, he studied abroad for a short time at Saint Louis University and Columbia University in the U.S. After returning to Japan, he became Head Physician of the Pediatrics Department at the National Hospital Organization Tokyo Medical Center in 1999. At the Tokyo Medical Center, he held successive jobs as Education and Training Manager, General Manager of Medical Care Department, General Manager of Medical Safety Management Department, and General Manager of the Clinical Trial Management Office. At Keio University School of Medicine, he was appointed professor at the Division of Infectious Diseases and Infection Control in 2010 and professor at the Department of Infectious Diseases in 2013. He has served as Director of the National Cancer Center from 2017 and as visiting professor at Keio University School of Medicine from 2018. He has also served as the Chairman of the Expert Council on Promotion of Vaccination, President of the Journal of the Japanese Society of Clinical Studies on Intestinal Microflora, and President of the Japan Antibiotics Research Association. He also served as President of the Japan Association for Infectious Diseases from 2013 to 2017.

Isao Miyairi (Medical Director, Department of Infectious Diseases, National Center for Child Health and Development)

Dr. Isao Miyairi graduated from the Faculty of Medicine at Keio University School of Medicine. He went to the U.S. in 2000 and became a resident at the Pediatrics Department at Long Island College Hospital/Beth Israel Medical Center and a fellow at the Pediatric Infectious Diseases at St Jude Children's Research Hospital/LeBonheur Children's Hospital. After that, he served as an assistant professor at the Pediatric Department and the Department of Microbiology, Immunology and Biochemistry at the University of the University of Tennessee Health Science Center College of Medicine in 2008. He returned to Japan in 2011 at which point he assumed his current post.

His current positions include: Board Certified Pediatrician and Medical Advisor, the Japan Pediatric Society; Medical Specialist and Medical Advisor, Japanese Association for Infectious Diseases; Board Certified Physician, American Academy of Pediatrics; Board Certified Physician, Pediatric Infectious Disease Society (PIDS); Councilor, Japanese Association of Infectious Diseases; Councilor, Japan Society of Chemotherapy; Member, Cabinet Secretariat AMR Control Council (from 2016); Member, Subcommittee of Basic Policy about Immunization in Immunization and Vaccine Meeting of the MHLW Health Science Council (from 2020); Chairman, Japanese Editorial Committee, Japan Pediatric Society (from 2020); Member, Immunization and Infectious Diseases Control Committee (from 2014); and Member, Central Committee of Certification (from 2017). He is also a member of the Review Board and Educational Committee of Board Certified Pediatricians in the Japanese Association for Infectious Diseases and a member of the editorial committee at the Journal of Infection and Chemotherapy (from 2017).

Kuniko Nakayama (Director, My Family Clinic Gamagori, Medical Association Mefa Jinaikai)

Dr. Kuniko Nakayama graduated from the Faculty of Medicine at Fujita Health University. She possesses a Doctorate in Infectious Diseases from the University of Tokyo Graduate School of Medicine Department of Internal Medicine. She also completed her MSc TMIH and DTM&H degrees at London School of Hygiene and Tropical Medicine. She has worked at Yodogawa Christian Hospital, St. Luke's International Hospital, the Department of Infectious Diseases at the University of Tokyo Hospital, and the Department of Internal Medicine in Lilongwe Central Hospital in Malawi. She studied alternative medicine at Royal London Hospital for Integrated Medicine. After she completed training in family practice at Kameda Family Clinic Tateyama and Centre for Family Medicine Development Tokai, she has been a director of My Family Clinic Gamagori, Medical Association Mefa since 2011. Her current positions include: Certified Family Physician, Japan Primary Care Association; Board Certified Member, the Japanese Society of Internal Medicine; Infection Control Doctor; Member, the Expert Council on the Promotion of Vaccination; Vaccine Team Leader, Japan Primary Care Association (JPCA) Preventive Medicine Project Team; and Chairperson, Infectious Disease Control Committee.

Leon Ochiai (Head, Public Relations Division, Responsible for Vaccine, Sanofi K.K.)

Dr. Leon Ochiai is a graduate of Johns Hopkins University (BA 1998; MHS 2001) and the University of Oxford (DPhil 2012). He worked with University of Malaysia Sarawak (UNIMAS) on research regarding the impact of malaria infection on child health from 2000 to 2002 and with International Vaccine Institute (IVI) on projects for typhoid fever vaccine from 2002 to 2013. He has been involved in epidemiological research on typhoid fever in Southeast Asian and South Asian countries such as Pakistan, Nepal, and India, where he was responsible for Phase IV vaccine trials (effectiveness evaluations) and other such activities. He led the dengue vaccine development team at Sanofi Pasteur from 2013 to 2016. From 2017 to 2019, he was responsible for public relations activities at Sanofi, particularly interactions with international organizations in the Asia Pacific region. He assumed his current position in 2020.

Akihiko Saito (Professor of Pediatrics and Vice President, Niigata University School of Medicine)

Dr. Akihiko Saito graduated from Niigata University School of Medicine in 1991. After completing his general residency at St. Luke's International Hospital, he went to the U.S. in 1995, where he became an associate professor of Pediatrics at University of California San Diego (UCSD) after completing his clinical training at the University of Southern California (USC) University Hospital Pediatric Department and the UCSD Department of Pediatrics Infectious Diseases. He also served as a Physician Scientist at UCSD from 2004. He returned to Japan in 2008 and he has served as a professor at Niigata University's Department of Pediatrics since 2011, where he was appointed Vice President of the Faculty of Medicine in 2020. He has made continuous efforts to raise awareness toward the importance of immunization among health care workers and the public, mainly through his activities at the Japan Pediatric Society.

Nobuhiko Okabe (Director General, Kawasaki City Institute for Public Health)

Dr. Nobuhiko Okabe graduated from the Jikei University School of Medicine in 1971. He served as a physician assistant in the Pediatrics Department at Teikyo University Hospital and the Jikei University Hospital. He then worked in the Pediatrics Department at Atsugi City Hospital (formerly the Kanagawa Prefectural Atsugi Hospital) and the Tokyo Metropolitan Kita Ryoiku Medical Center. He belonged to a laboratory of the Pediatric Infectious Diseases Division at Vanderbilt University. After returning to Japan, he served as Director of the Division of Infectious Diseases at the National Center for Child Health and Development and served at the Kanagawa Prefectural School Hospital of Nursing and Midwifery. He was then appointed Manager of the Communicable Diseases Division of the World Health Organization's Regional Office for the Western Pacific (WHO/WPRO) in the Philippines. After returning to Japan, he became an associate professor of the Pediatrics Department at Jikei University Hospital. In 1997, he served as Director of Infectious Disease Surveillance Center Office at the National Institute of Infectious Diseases, where he became Director of the Infectious Disease Information Center in 2000. He has served as the Director General of Kawasaki City Institute for Public Health from 2010. He also serves as visiting professor at the Pediatric Department at Jikei University Hospital. His current positions include: Representative of the Chairman, Advisory Council on Countermeasures against Novel Influenza and Other Diseases, Cabinet Secretariat; Member, Subcommittee on Novel Coronavirus Disease Control, Cabinet Secretariat; Member, Government Future Investment Committee; Chairman, Regional Commission for the Certification of Poliomyelitis Eradication (RCC) in the Western Pacific, WHO; Member, Global Commission for Certification of Poliomyelitis Eradication (GCC); Member, Global Advisory Committee on Vaccine Safety (GACVS); and President, Asian Congress of Pediatric Infectious Diseases.

Mugen Ujiie (Director of Travel Clinic, Director of Immunization Support Center, Disease Control and Prevention Center, Center Hospital of the National Center for Global Health and Medicine (NCGM))

Dr. Muge Ujiie graduated from the Faculty of Medicine at Showa University School of Medicine. After completing his general residency, he earned his Master of Public Health degree with a certificate in tropical medicine from Nagasaki University in 2006. He engaged in clinical work in infectious disease, respiratory medicine, and overseas research at the Department of Clinical Medicine at Nagasaki University's Institute of Tropical Medicine until 2009. He joined the Disease Control and Prevention Center at the National Center for Global Health and Medicine in 2010. From 2013, Dr. Ujiie was responsible for infectious disease and immunization administration at the Tuberculosis and Infectious Diseases Control Division of the MHLW. In 2016, he served as a senior program manager of the pneumococcus program at Gavi, the Vaccine Alliance. He then returned to the National Center for Global Health and Medicine in 2017. At present, he is engaged in clinical work, mainly for overseas travelers, as Director of Travel Clinic and Director of Immunization Support Center at the Center Hospital of the National Center for Global Health and Medicine (NCGM) Disease Control and Prevention Center. He also currently serves as an advisory committee member to the Health Sciences Council at MHLW and as counselor to the Japanese Society of Tropical Medicine and the Japanese Society of Travel and Health.

Special Advisors (Titles omitted; in no particular order)

Noriko Furuya (House of Representatives Acting Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention)

Ms. Noriko Furuya was born in Urawa City, Saitama Prefecture (now Saitama City). She graduated from the School of Humanities and Social Sciences at Waseda University in 1979. In the same year, she joined Seikyo Shimbun. She was elected to the House of Representatives for the first time in the 43rd General Election in 2003. She was later appointed Parliamentary Vice-Minister for Internal Affairs and Communications (MIC) in 2005; Vice Chairperson of the Komeito Policy Research Council in 2006; Deputy Secretary-General of Komeito in 2009; Chairperson of the Komeito Women's Committee in 2010; Komeito Vice-President in 2014; Senior Vice Minister of Health, Labour and Welfare in 2016; and Chairperson of the House of Representatives General Affairs Committee in 2017. She is currently serving her sixth term as a member of the House of Representatives.

Ichiro Kamoshita (Member, House of Representatives; Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention)

Dr. Ichiro Kamoshita earned a Doctor of Medicine degree from the Nihon University Graduate School of Medicine in 1979. He was elected to the House of Representatives in 1993. He was appointed Parliamentary Vice-Minister for Environment in 1994; Senior Vice-Minister of Health, Labour and Welfare in 2002; Chairman of the House of Representatives Committee on Health, Labour and Welfare in 2005; and Minister of the Environment in 2007. His past roles in the LDP have included Deputy Chairperson of the Policy Research Council in 2009; Acting Secretary-General in 2012; Chairperson of Diet Affairs Committee in 2012; Deputy Chairperson of the Special Committee on the Social Security System in 2013; Chairperson of the House of Representatives Special Commission on Consumer Issues in 2015; and Chairman of the Research Commission on the Social Security System in 2018.

Keizo Takemi (Member, House of Councilors; WHO Goodwill Ambassador for UHC)

Professor Keizo Takemi was born in Minato City, Tokyo, on November 5, 1951. He graduated from the Keio University Faculty of Law Department of Political Science in 1974, where he also earned his Master's degree in 1976. He began serving as an assistant professor at Tokai University Faculty of Political Science and Economics School of Political Science and Economics in 1980. There, he was appointed Associate Professor in 1987 and Professor in 1995. He was first elected to the House of Councillors in 1995, and is currently serving his fifth term representing the Tokyo Metropolis district. From 1984 to 1987, he was an anchor for TV Asahi CNN Daywatch and Morning Show. His previous official roles include Vice-Minister for Foreign Affairs; Chairman of the House of Councillors Committee on Foreign Affairs and Defense; Senior Vice-Minister of Health, Labour and Welfare; Acting Chairman of the General Council of the Liberal Democratic Party (LDP); and Chairman of the Policy Council of the House of Councillors (LDP). He currently serves as a member of the UN Commission on Institutional Reform under the UN Secretary-General, as a member of the Commission on Information and Accountability for Women's and Children's Health, and on the World Health Organization (WHO) Expert Working Group on Research Development (R&D) Financing. He was a research fellow at the Harvard School of Public Health from 2007 to 2009. His current positions include Vice-chairperson, Liberal Democratic Party House of Councilors; Chairperson, Special Mission Committee on Global Health Strategy, Policy Research Council, LDP; Acting Director, Infectious Disease Measures Governance Subcommittee, the Novel Coronavirus Response Headquarters, LDP; WHO Goodwill Ambassador for Universal Health Coverage (UHC); Senior Fellow, Japan Center for International Exchange (JCIE); and Visiting Professor, Nagasaki University.

Kiyoshi Kurokawa (Chairman, Health and Global Policy Institute)

Dr. Kiyoshi Kurokawa graduated from the University of Tokyo Faculty of Medicine. He moved to the U.S. in 1969 and served as Professor of Internal Medicine at University of California, Los Angeles School of Medicine from 1979. After returning to Japan in 1983, he held various positions including Professor, University of Tokyo; Dean, Tokai University School of Medicine; President, Science Council of Japan; Member, Council for Science, Technology and Innovation, Cabinet Office from 2003 to 2007; Science Advisor to the Prime Minister from 2006 to 2008; and World Health Organization (WHO) Commissioner from 2005 to 2009. He served as Chairman of the National Diet of Japan's Fukushima Nuclear Accident Independent Investigation Commission from December 2011 to July 2012. From January 2013 to June 2018, he served as Chair and Representative Director of Global Health Innovative Technology (GHIT). From October 2013 to March 2019, he served as Special Advisor on Health and Medical Strategy at the Cabinet Secretariat Headquarters for Healthcare and Medical Strategy Promotion. His current positions include Visiting Researcher, Massachusetts Institute of Technology (MIT); Member, World Dementia Council (WDC); Member, International Advisory Board, John B. Little (JBL) Center for Radiation Sciences, Harvard T.H. Chan School of Public Health; Professor Emeritus, National Graduate Institute for Policy Studies (GRIPS); and Professor Emeritus, The University of Tokyo. He has also been named a Distinguished Professor of Tokai University.

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Many people in industry, Government, academia, and civil society have shared their opinions with us since we began work on this proposal in early 2020. We are deeply grateful for the expert advice we received over the course of this project and the support for the objectives outlined in this policy proposal given by our advisory board members (listed in alphabetical order), Kyoko Ama (Former Representative, Ippan Shadan Hojin Shiro Shoni Iryo Mamoro Kodomo-tachi no Kai; Board Member, Japan Patient Support Research Organization (JPSO)), Hidenori Arai (President, National Center for Geriatrics and Gerontology; Vice President, The Japan Geriatrics Society), Satoshi Iwata (Department of Infectious Diseases, National Cancer Center Hospital; Visiting Professor, Department of Infectious Diseases, Keio University School of Medicine; Chairperson, The Expert Council on Promotion of Vaccination), Isao Miyairi (Medical Director, Department of Infectious Diseases, National Center for Child Health and Development), Leon Ochiai (Responsible Party for Vaccines, Public Relations Division, Sanofi K.K.), Kuniko Nakayama (Director, My Family Clinic Gamagori, Medical Association Mefa Jinaikai), Nobuhiko Okabe (Director General, Kawasaki City Institute for Public Health), Akihiko Saitoh (Professor, Department of Pediatrics, Graduate School of Medical and Dental Sciences, Niigata University), Akinori Sugaya (Head Physician, Sugaya Children's Clinic; Director, KNOW VPD Protect Our Children), and Mugen Ujiie (Director, Travel Clinic; Director, Immunization Support Center, Disease Control and Prevention Center, Center Hospital of the National Center for Global Health and Medicine (NCGM)); as well as for the advice of our special advisors (listed in alphabetical order), Noriko Furuya (Member, House of Representatives; Acting Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention), Ichiro Kamoshita (Member, House of Representatives; Chairperson, Association for the Promotion of Improved Public Health, Parliamentary Group for Vaccines and Prevention) and Keizo Takemi (Member, House of Councillors; Goodwill Ambassador for UHC, World Health Organization); and to our project observers (listed in alphabetical order), Masayuki Imagawa (Representative Director, Japan Vaccine Industry Association (President)), Shinji Matsumoto (Chair, Vaccines Working Team, EFPIA Japan), Naokazu Saito (Director, Policy Intelligence Department, Janssen Pharmaceutical K.K.), Daisaku Sato (Chief Management Officer & Associate Centre Director for Regulatory Science, Pharmaceuticals and Medical Devices Agency, Japan), Keiko Tanaka-Taya (Chief, Division of Immunization Program, Infectious Disease Surveillance Center, National Institute of Infectious Diseases) and Ryuji Wakita (Director, National Institute of Infectious Diseases); and to our Global Expert Meeting participants (listed in alphabetical order), Yoshie Hirose (Manager, Policy Intelligence Department, Janssen Pharmaceutical K.K.), Akinari Moriya (Airport Quarantine Medical Supervisor, Central Japan (Chubu), International Airport Quarantine Station, Nagoya Quarantine Station), Kazunori Oishi (Chief, Toyama Institute of Health), Lois Privor-Dumm (Director, Adult Vaccines, International Vaccine Access Center, Johns Hopkins Bloomberg School of Public Health), Yoshihiro Takashima (Coordinator, Vaccine-Preventable Diseases and Immunization (VDI), and Huong Thi Giang Tran (Director, Division of Programmes for Disease Control, World Health Organization Western Pacific Office (WPRO)), Division of Programmes for Disease Control, WPRO).

Please note that affiliations and positions listed above are basically those from the time of our project meetings and may differ from current affiliations and positions. This proposal is a compilation of opinions shared at discussions held over the course of this project that were gathered by the secretariat, Health and Global Policy Institute. This proposal should not be taken to represent the opinions of any specific participant or organization.

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