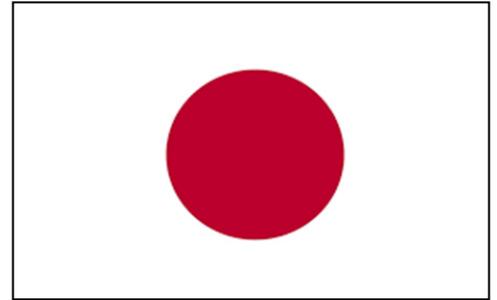


POSITION PAPER

COUNTRY: Japan

COMMITTEE: United Nation General Assembly
[UNGA]

DELGATE: Shubhalakshmi Tripathi



AGENDA: Promoting the Use of Alternatives to Antimicrobials and New Technologies for Diagnosis and Vaccines

LOCATION: Japan is an island country in East Asia, located in the northwest Pacific Ocean. It is bordered on the west by the Sea of Japan, and extends from the Sea of Okhotsk in the north toward the East China Sea and Taiwan in the south.



INTRODUCTION: The Ministry of Health, Labor and Welfare (MHLW) is the central leading organization in the Japanese health care system. Japan's health care system is characterized by excellent health outcomes at a relatively low cost; the system emphasizes equity, facilitated by universal insurance coverage through social insurance premiums and tax subsidies, with virtually free access to health-care facilities. The country's population is rapidly ageing and Japan needs to transform its health care system into one that prioritize patient value, quality and efficiency of care, and integrated approaches across sectors . Japan's health system is distinctly characterized by universal health insurance, which provides excellent health outcomes at a relatively low cost with equity (Ikegami N et al., 2011; Murray CJL, 2011). By law, all residents of Japan (including foreign nationals with a residence card) must be enrolled in a health insurance programmer.

NEW TECHNOLOGIES FOR DIAGNOSIS AND

VACCINES: “The size of the Japanese healthcare market has grown by over 50% over the last 20 years, while GDP has grown by less than 10% over the same timeframe. We expect it to keep growing at this pace over the next decade and beyond.” said Yasushi Hasegawa, co-founder and director of Tokyo-based trade and investment consultancy Fenetre Partners.

DIAGNOSIS SECTOR: Japan’s burgeoning healthcare market presents an array of new business opportunities; for example, in generics, over-the-counter drugs and health management services. There are lucrative opportunities in diagnostic imaging, healthcare information technology and in-vitro diagnostics. With Japan leading the world in imaging scan rates per capita, the innovation of miniature endoscopes typifies how Japanese companies are applying cutting-edge expertise to optimize healthcare.

In 2015, RIKEN-SRK Collaboration Center for Human-Interactive Robot Research and Sumitomo Riko Company developed Robear, an experimental humanoid nursing-care robot that is able to lift patients from beds into wheelchairs or help them to stand up, with a “gentle touch.”

{Robear[Humanoid Nursing-Care Robot]}

VACCINES SECTOR: Producing Safe Vaccines in Vietnam: Japan's Successful 20-Year Effort to Transfer Technology

In Vietnam, it has become possible to produce safe, high-quality vaccines, which is proving useful in preventing infectious diseases. With the cooperation of Kitasato Daiichi Sankyo Vaccine Co., Ltd., one of Japan's leading vaccine manufacturers, JICA has been working on projects to strengthen Vietnam's capacity to produce vaccines for the past 20 years. Cultivating an attenuated virus to produce a live vaccine requires advanced skills. Japanese technical experts who led the projects to success and The Centre for Research and Production of Vaccines and Biologicals (POLYVAC), the Vietnamese vaccine manufacturing agency. The efforts of JICA and Kitasato Daiichi Sankyo Vaccine began in earnest with the construction of a vaccine manufacturing facility in 2002. Attempts to transfer measles vaccine manufacturing techniques began in 2006, and it first became possible

to produce the vaccine in Vietnam in 2010. That vaccine is currently being used for routine immunization of 9-month-old infants. Through a long process of trial and error, the Japanese experts optimized Japanese techniques for the Vietnamese environment and painstakingly taught their counterparts the manufacturing method.

"We experts can manufacture the vaccine in Vietnam using Japanese techniques. But the most important thing is how to ensure that the techniques take root in Vietnam," said Project Manager Setsuo Arai. These words were proven correct when there was a measles epidemic in Vietnam in 2013. With large amounts of vaccine urgently needed, POLYVAC produced in just six months the quantity of measles vaccine Kitasato Daiichi Sankyo Vaccine typically produces in 10 years in Japan and quickly prevented the epidemic's spread. The Japanese experts all say with confidence that this proved what they had been doing was correct. Vietnam is now taking a step forward to export the vaccines it learned to produce through the project to neighboring countries. To do so, it will be essential for it to continue to maintain quality that complies with WHO standards. After the project ends in May 2018, Japanese experts will continue providing technical support so Vietnam can stably supply vaccines that meet the criteria on an ongoing basis. The bonds forged between Japanese experts and Vietnamese technicians will persist.

PROMOTING THE USE OF ALTERNATIVES TO

ANTIMICROBIALS: Antimicrobial resistance is a global threat that spans all countries, even those with lower consumption of AMTs. Antimicrobial resistance is a natural phenomenon part of the evolution of bacteria. As any living organism, bacteria can go through random evolutionary changes in their genes. Mutations in these genes can produce new or altered traits that may provide new abilities or capacities.

STEPS TAKEN BY JAPAN: The inappropriate use of antimicrobials has been indicated as the background to the global spread of antimicrobial resistance (AMR). According to a national research group report¹ in 2010, total antibiotics use in humans in Japan was approximately 15.8 per day per 1,000 inhabitants in 2013, which, compared to developed countries in the European Union (EU), follows Germany in ranking relatively low. Efforts against AMR in

Japan have started with antibiotic R&D, and focused subsequently on infection control mainly in healthcare facilities, and ensuring the appropriate antibiotic use in animals.

Japan has produced many novel antibiotics since the 1950s. They have been used as antibiotics of a global standard. 8 Colistin, amikacin, and meropenem, among others, are the few antibiotics that remain effective against highly resistant bacteria called multidrug-resistant bacteria. Because infectious diseases were no longer the leading cause of death, antibiotic development has steadily declined since the 1990s. The global pharmaceutical trends shifted to drug development for non-communicable diseases (NCDs), which are perceived to produce more continuous returns. Under such circumstances, the Japan Agency for Medical Research and Development (AMED) was established in April 2015, based on the Act on Promotion of Healthcare Policy (Act No. 48 of 2014, May) and the Act on the Independent Administrative Agency of Japan Agency for Medical Research and Development (Act No. 49 of 2014, May). AMED promotes integrated medical R&D activities from basic R&D to R&D focused on practical application under the Headquarters for Healthcare Policy and based on the Plan for Promotion of Medical Research and Development (approved by the Headquarters for Healthcare Policy, July 2014).

To protect both Japanese citizens and people worldwide from infectious disease, the Agency focuses on the promotion of measures against infectious diseases and will strengthen measures to combat infectious diseases by promoting research at home and overseas into infectious diseases and will ensure more efficient, effective linkage of these results into the development of therapeutic drugs, diagnostic drugs, and vaccines.

In 2000, MHLW launched the Japan Nosocomial Infections Surveillance (JANIS) program to promote rapid detection and appropriate response to nosocomial infections, and has constantly analyzed and assessed the prevalence of AMR and other related matters at the Central Council on Control of Nosocomial Infections in MHLW. Participation of medical institutions to JANIS has been increasing year by year, currently reaching 1,859 organizations as of January 2016.

NATIONAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE (AMR) (2016-2020)

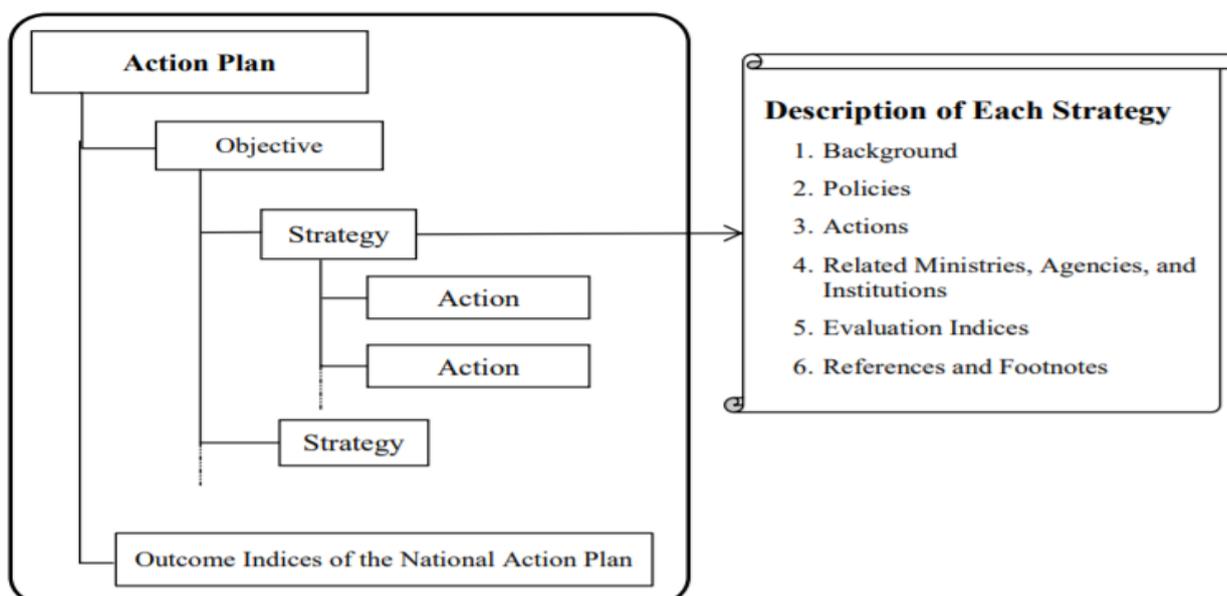
OBJECTIVE: To slow the emergence of antimicrobial resistance (AMR) and prevent its spread.

In its aim of promoting countermeasures on antimicrobial resistance (AMR), this National Action Plan is structured around goals (top tiers) in the following six areas:

Table 1.1. Six Areas and Goals for Countermeasures on AMR

Fields	Goals
1 Public Awareness and Education	Improve Public Awareness and Understanding, and Promote Education and Training of Professionals
2 Surveillance and Monitoring	Continuously Monitor Antimicrobial Resistance and Use of Antimicrobials, and Appropriately Understand the Signs of Change and Spread of Antimicrobial Resistance
3 Infection Prevention and Control	Prevent the Spread of Antimicrobial-resistant Organisms by Implementing Appropriate Infection Prevention and Control
4 Appropriate Use of Antimicrobials	Promote Appropriate Use of Antimicrobials in the Fields of Healthcare, Livestock Production and Aquaculture
5 Research and Development	Promote Research on Antimicrobial Resistance and Foster Research and Development to Secure the Means to Prevent, Diagnose and Treat the Antimicrobial-resistant Infections
6 International Cooperation	Enhance Global Multidisciplinary Countermeasures against Antimicrobial Resistance

Figure 1.1. The Framework of the National Action Plan on AMR and the Description of Each Strategy



GOAL 1- Strategies

- (1.1) Promote Public Awareness-raising Activities to Improve Public Knowledge and Understanding of AMR**
- (1.2) Promote Education and Training on AMR of Professionals Involved in Related Fields**

GOAL 2-Strategies

- (2.1) Strengthen the Surveillance of Antimicrobial Resistance in Healthcare and Nursing Care**
- (2.2) Monitor the Trend of the Antimicrobial Use at Medical Institutions**
- (2.3) Strengthen Surveillance and Monitoring in the Fields of Veterinary Medicine, Livestock Production and Aquaculture**
- (2.4) Standardize Methods of Laboratory Testing and Strengthen Testing Functions of Antimicrobial Resistance at Clinical, Commercial and Public Health Laboratories**
- (2.5) Implement Integrated One Health Surveillance Including Humans, Animals, Food, and the Environment**

GOAL 3- Strategies

- (3.1) Infection Prevention and Control in Healthcare and Nursing Care and Promotion of Regional Cooperation**
- (3.2) Promote Infection Prevention and Control in Livestock Production, Aquaculture, Veterinary Medicine and Food Chain**
- (3.3) Strengthen the Outbreak Response Capacity against Antimicrobial-resistant Infections**

GOAL 4- Strategies

- (4.1) Promote Antimicrobial Stewardship at Medical Institutions**
- (4.2) Ensure Prudent Use of Antibiotics for Animals in the Field of Livestock Production, Aquaculture and Veterinary Medicine**

GOAL 5- Strategies

- (5.1) Promote Research to Elucidate the Mechanism of the Emergence and Transmission of Antimicrobial Resistance and its Socioeconomic Impact**
- (5.2) Promote Research on Public Awareness/Education on Antimicrobial Resistance, Infection Prevention and Control, and Antimicrobial Stewardship**
- (5.3) Promote Clinical Research on the Optimization of Existing Methods for Prevention, Diagnosis and Treatment of Infectious Diseases**

(5.4) Promote Research and Development of Novel Methods for Prevention, Diagnosis and Treatment and Promote the Cooperation of Industry, Academia and Government

(5.5) Promote Global Research Collaboration on Antimicrobial Resistance and Research and Development of Novel Methods for Prevention, Diagnosis and Treatment of Antimicrobial-resistant Infections

GOAL 6- Strategies

(6.1) Strengthen Japan's Leadership for Global Policies on Antimicrobial Resistance

(6.2) Promote International Cooperation to Achieve the Global Action Plan on Antimicrobial Resistance

MONITORING AND EVALUATION OF PROGRESS:

Progress in each strategy and action, as well as process indices, should be evaluated annually in the framework of the Ministerial Meeting on Measures on Emerging Infectious Diseases. The outcome indices should be evaluated by issuing the annual One Health Surveillance Report on AMR (tentative name)



REFERENCES

1	<u>The Government of Japan</u>
2	<u>We are Tomodachi [Gov. of Japan]</u>
3	<u>E-MAGAZINE</u>
4	<u>NAP AMR 2016-2020</u>
5	<u>ANTIMICROBIAL RESISTANCE IN G7 COUNTRIES AND BEYOND</u>
6	<u>Bio Science Trends</u>
7	<u>Japan International Cooperation Agency</u>