

AMR Alliance Japan

Recommendations on the Domestic AMR Surveillance System

September 2020

Every year, approximately 700,000 people are estimated to die from antimicrobial resistance (AMR) related causes globally. Without action on this issue, it is projected that this figure could rise to up to 10 million people per year by 2050. AMR is a growing problem. In Japan, countermeasures against AMR have been advanced by the Government to this point based on the “National Action Plan on Antimicrobial Resistance 2016-2020,” which was presented by the Japanese Government’s Ministerial Committee on Infectious Disease Control in April 2015. Over the five years of this plan, various efforts have been undertaken to strengthen AMR surveillance, including the Japan Antimicrobial Resistant Bacterial Surveillance (JARBS) project, which was started by the National Institute of Infectious Diseases (NIID) to accumulate and analyze information on antimicrobial-resistant bacteria within Japan and abroad; and the creation of the Japan Surveillance for Infection Prevention and Healthcare Epidemiology (J-SIPHE) system, which is operated by the National Center for Global Health and Medicine’s AMR Clinical Reference Center to track AMR countermeasures within healthcare facilities. AMR infectious are also tracked by the Ministry of Health, Labour and Welfare’s Japan Nosocomial Infections Surveillance project (JANIS). According to data from this project, as many as 8,000 people die every year of AMR-related causes in Japan. AMR Alliance Japan is grateful for the efforts of the Japanese Government thus far and the many experts who have made contributions to the fight against AMR. The creation of a sustainable and comprehensive surveillance system is critical to efforts to accurately assess the risks posed by AMR and to evaluate countermeasures. It is also important for the development of AMR diagnostics, and pharmaceuticals for treating antimicrobial-resistant infections. Accordingly, based on policy recommendations developed in July 2019 (“The Japanese Government’s Role in Promoting AMR Countermeasures”), AMR Alliance Japan has developed the following recommendations on policies that could further improve the AMR surveillance system in Japan. These recommendations include content related to the revision of the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases, among other measures.

Please note that within this proposal, the “surveillance system” is defined as having the primary role of accurately monitoring the risks poses by antimicrobial-resistant infections.

The significance of AMR surveillance

- Makes risk assessment for antimicrobial-resistant infections possible
- Makes the assessment of AMR countermeasures possible
- Contributes to the development of antimicrobials and new diagnostic technology

Problems stemming from the lack of a sustainable and comprehensive AMR surveillance system

- There is a lack of information available on pathogens and outcomes related to people who have contracted with antimicrobial-resistant infections, making it difficult to conduct assessments of the risks posed by AMR within Japan.
- There is an insufficient legal framework in place for AMR countermeasures, which has caused there to be a shortage of human resources at NIID and public health centers across the country, and made the implementation of comprehensive and appropriate AMR countermeasures difficult.
- There is no system in place for information sharing about the status of specific regions related to antimicrobial-resistant infections, making it difficult to implement rapid AMR countermeasures.
- There is no system in place to accurately monitor antimicrobial-resistant infections at elderly care facilities (long-term care health facilities, special nursing homes for the elderly), outpatient care facilities, or healthcare institutions with 200 beds or fewer. The state of antimicrobial use at these facilities is unknown. This makes it difficult to implement appropriate AMR countermeasures at these facilities.
- There is insufficient information on AMR among humans, animals, and in the environment per region. This makes it difficult to implement countermeasures from a One Health perspective.

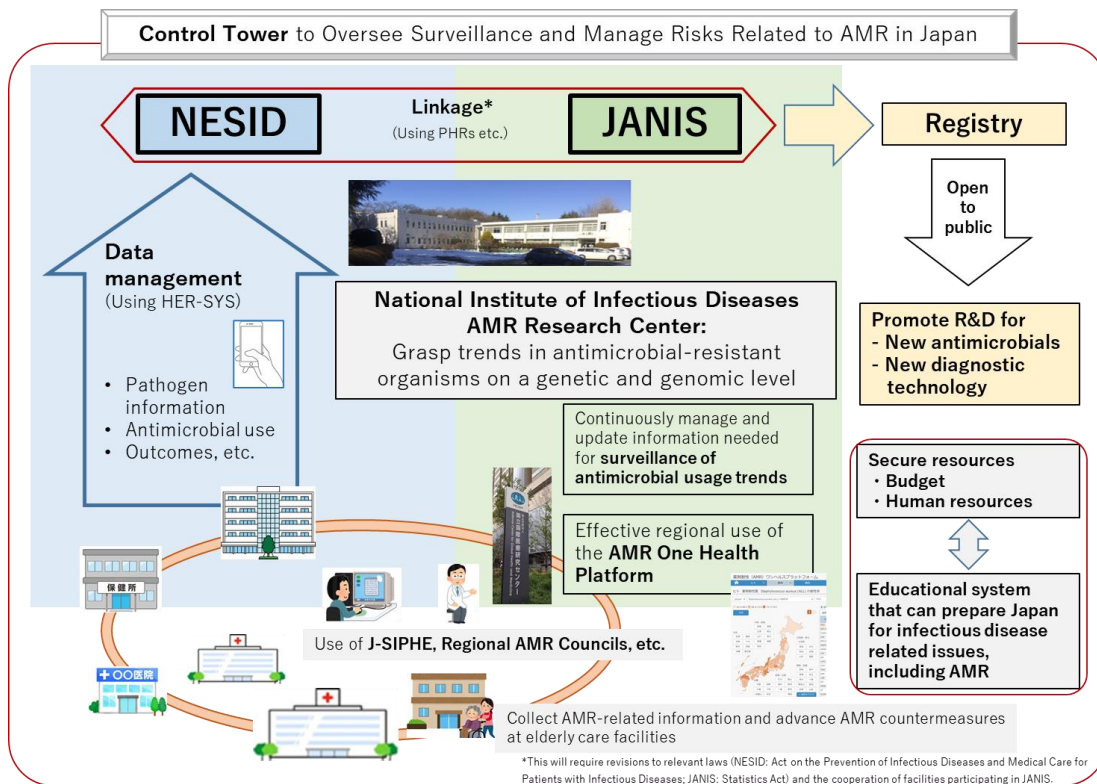
Recommendations on the construction of a sustainable and comprehensive AMR surveillance system

- In order to gather the information needed to conduct risk assessments on antimicrobial-resistant infections, regulations on infectious disease reporting should be revised (this should include the revision of reporting methods for pathogen tests as well). New regulations should **require reports to include pathogen information (including genetic information), antimicrobial use, as well as outcomes and other patient information.** When revising regulations, it would be ideal to take into account lessons learned from research conducted for COVID-19 Registry Japan, and set appropriate time periods at which to require follow-up reports. Furthermore, as the aforementioned information would be beneficial to the development of new antimicrobials and other research efforts, considerations should be made toward making the information available publicly so that it can be more actively used (including for the update of priority pathogen lists, among other initiatives).
- To lessen the operational burden placed on NIID and public health centers by their participation in the National Epidemiological Surveillance of Infectious Diseases (NESID) project, and to streamline surveillance work, **information related to infectious diseases, including AMR, should be managed electronically** starting from the time healthcare institutions submit initial reports about patients. It would be ideal to make effective use of the information system established for Coronavirus Disease 2019 (COVID-19), the Health Center Real-time information-sharing System on COVID-19 (HER-SYS), to improve information-sharing related to infectious diseases in general, including antimicrobial-resistant infections. In doing so, the Government should consider ways to improve HER-SYS and expand its use.
- To help rapidly detect cases of AMR infectious at the regional level, the **information held by NESID and JANIS should be linked at the patient level.** This could be done using patient identification numbers or other such information contained within Personal Health Records (PHRs).
- Reports on infectious diseases required as part of efforts to implement the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases should be required to include information on AMR. **AMR-related information should be collected by municipal governments and collated by NIID's Antimicrobial Resistance Research Center in order to make it possible to grasp national trends (related to both resistance and virulence)**

in the domestic spread of antimicrobial-resistant organisms at the genetic or genomic level.

- **Systems to collect AMR-related information and systems to promote AMR countermeasures should be created in parallel for elderly care facilities, (such as long-term care health facilities or special nursing homes for the elderly) and other healthcare institutions where antimicrobial-resistant infections are not currently being tracked.** For example, Japan would benefit from the creation of a system for at special nursing homes for the elderly that could simultaneously track diagnostic test information related to pneumonia, urinary tract infections, and so on, alongside information on the pharmaceuticals being used to treat those infections (including what antimicrobials were used, the amount of support received from the long-term care service fee system, and so on). Furthermore, considerations should be advanced toward requiring regional medical facilities with 200 care beds or fewer to report AMR-related information to JANIS. This could be achieved by making such reports a requirement in order to be eligible to receive “Infectious Disease Prevention Premium 1” in the medical service fee system, or it could be undertaken within the MHLW “Regional AMR Committee” model project.
- **Requiring only a relatively low effort on the part of medical facilities, the J-SIPHE platform should be utilized more actively for the promotion of infectious disease countermeasures across Japan.** In order to gather AMR-related information from a greater number of healthcare facilities, it is important to design systems in a way that benefits the facilities that provide the information. Accordingly, the Government should consider ways that regional medical facilities might be able to collaborate with Regional AMR Committees and other such bodies within J-SIPHE to receive direct guidance from infectious disease specialists (including feedback on the AMR countermeasures being implemented by each facility). Additionally, in light of lessons learned from COVID-19, greater support should be given to regional public health centers. Efforts should be made to establish cooperative frameworks between public health centers and related organizations (including schools and medical associations). It is conceivable that such collaboration could create new possibilities for the fight against AMR, such as the development of new regional countermeasures by local medical associations and governments based on data provided by local pharmacies on antimicrobial use. For that reason, it is especially important for the Government to consider further support for regional cooperation.

- **Revisions should be made to the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases** and other related regulations to achieve the recommendations described above and promote comprehensive AMR countermeasures. It is important that legal revisions be undertaken from the perspective of making it possible to continuously sustain the AMR countermeasures that have been implemented in Japan over the past few years. **In particular, “antimicrobial-resistant infections” should be defined within the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases.**
- An understanding of the actual situation of antimicrobial use in Japan is indispensable for the implementation of effective AMR countermeasures. **A system should be built to manage up-to-date information on antimicrobial use, and information needed for analyses and assessments related to antimicrobial use (including information for Anatomical Therapeutic Chemistry (ATC) classification).**
- **Information in the AMR One Health Platform should be organized by prefecture such that it can be used more effectively within each region.** Further efforts should be made to grasp the distribution of antimicrobial-resistant organisms in soil, water, and elsewhere in the natural environment, with the results of such efforts being shared in the aforementioned platform.
- A central control tower should be created to supervise nationwide surveillance of AMR. In recognition of the threat that AMR poses to humanity on a global scale, that control tower should work to construct a sustainable and comprehensive surveillance system to be jointly operated by industry, government, academia, and civil society.



Proposed Structure for the AMR Surveillance System in Japan

The Government should work to secure a sufficient budget and human resources in order to implement the above measures. An educational system that can train the staff members of even the small-scale medical facilities located outside of major cities will be needed in order to secure sufficient human resources for this challenge. Looking toward the future, it is crucial that the public and private sector work together on the creation of an educational system that can foster the human resources Japan needs to respond to the challenges posed by infectious diseases, including AMR.