AMR Alliance Japan

POLICY BRIEF

Supporting education on AMR for the public and medical practitioners

Executive summary

- Understanding about antimicrobial resistance remains highly variable across countries, and awareness and education has been a primary strategy for many National Action Plans on AMR.
- In Japan, awareness among the public and healthcare workers remains low. Many organizations have been actively working toward raising awareness, such as the AMR Clinical Reference Center.
- While international, national, and multi-sectoral organizations have been implementing awareness activities and supporting educational programs, the impact of such programs has been inconsistent across countries.
- Evidence-based and context-specific educational programs are need to raise awareness on AMR among the public and healthcare workers.

Introduction

The first objective of the leading policy report to curb antimicrobial resistance, *Global Action Plan on Antimicrobial Resistance* published by the Food and Agriculture Organization, World Organization on Animal Health, and World Health Organization is to "improve awareness and understanding of antimicrobial resistance through effective communication, education, and training."[1] Awareness-raising and educational measures are crucial to efforts to change behavior in order to tackle antimicrobial resistance. Such activities are not restricted to the general public, but also target healthcare professionals, such as doctors, nurses, pharmacists, and medical technicians. That said, the positive impact of public awareness campaigns cannot be guaranteed. Awareness-raising and educational efforts are challenging due to the need for messages to be based on scientific evidence and tailored to local contexts. [2,3]

Public awareness on antimicrobial resistance focuses on the promotion of proper antimicrobial consumption and the call for public action on AMR. Uninformed about antimicrobial resistance, patients may ask for antimicrobials when they're ineffective. Examples of public education on AMR include social media (e.g. Twitter, Facebook, and Instagram), outreach material, school activities, and media seminars.

Education for medical professional's centers around antimicrobial stewardship and ensuring that countermeasures are taken to limit the spread of antimicrobial resistance. To ease the fear of patients, doctors may prescribe antimicrobials even if they are ineffective. Moreover, doctors may prescribe the wrong antimicrobial regimen, exacerbating antimicrobial resistance. Examples of education for healthcare professionals on antimicrobial resistance include educational seminars by antimicrobial stewardship teams (ASTs) and infection control teams (ICTs), clinical guidelines, and monitoring of antimicrobial prescription patterns.

Background of the Issue: Japan

According to a 2019 internet survey by Health and Global Policy Institute, 38.6% of the general public in Japan is unaware of AMR as a concept.[4] Even among the 61.5% of people that know of AMR, 47.3% reported having only heard of the term, with little understand about what it means. Such major gaps in awareness can result in misunderstandings surrounding the causes of AMR and unnecessary requests from patients to prescribe antimicrobials when they are sick.

For example, the HGPI survey found that 51.2% of the general public is unaware that antimicrobials are ineffective for influenza.[4] As a consequence, doctors have indicated that they feel pressured by patients to prescribe antimicrobials for

conditions that do not require them, which can accelerate antimicrobial resistance. In Japan, among physicians that have prescribed antimicrobials for the common cold, about 28% claim it was due to demands from patients or their family. [5]

Lack of awareness surrounding AMR is not limited to the general public, but is also seen among doctors. In Japan, the Ministry of Health, Labour, and Welfare published the "Manual of Antimicrobial Stewardship," which provides guidelines for physicians when prescribing antimicrobials.[6] However, according to a 2019 survey by The Japan Association for Infectious Diseases, only 14.2% of clinical doctors used the manual, while 85.9% of physicians either knew about it but did not use it (43.7%) or were unaware of it (42.2%).[5] Despite the low uptake, about 61% of physicians believed that manuals and guidelines are needed for daily practice. Furthermore, at the policy level, about 44.9% of physicians are unaware and only 32.2% have heard of Japan's 2016 National Action Plan on AMR, the report on Japan's strategy for curbing AMR. [5]

Stakeholders and Countermeasures: Japan

Stakeholder	Countermeasure
Cabinet Secretariat	• "Antimicrobial Resistance (AMR) Countermeasure Promotion Month" [7] • "AMR countermeasure, dissemination, and awareness" awards. • Public awareness raising meeting on promoting measures against AMR • "Reduce AMR!" Ambassador"
Ministry of Health, Labour, and Welfare	• Manual for Antimicrobial Stewardship
AMR Clinical Reference Center	• Regular online surveys to Japanese public on the appropriate use of antimicrobials. [8] • Targeted public education and awareness-raising activates for parents with young children • Website – easily accessible information on AMR and infectious diseases in general • Outreach material – nine videos, nine posters, four leaflets, three booklets, and seven infographics freely available to download • Other activities include media seminars, activities in schools, Infectious Disease Education Consortium, and National Conference on Drug Resistance Promotion (AMR) Measures.
Mie Prefecture's AMR awareness program	• During the AMR awareness month in November 2017 and 2018, leaflets and posters about open lectures and events were distributed to all hospitals, healthcare facilities for the elderly, and health insurance pharmacies in Mie Prefecture. Billboards and advertisements were also set up in bus and Tsu railway station. [9]
News and Media	• Coverage of AMR on television, radio, and newspapers. Dissemination of information from academics and credible sources, such as AMR Clinical Reference Center.
Antimicrobial Stewardship Teams (ASTs) and Infection Control Teams (ICTs)	• Education programs - monitoring and feedback, optimization of antimicrobial drugs such as de-escalation, and revision of guidelines and clinical pathway. [10]

Background of the Issue: Global

While many countries have implemented educational campaigns, their impact has been sparse, and awareness varies across countries and populations. In 2015, a public survey conducted by the World Health Organization (WHO) across 12 countries found that the percent of people who have heard of the term "antibiotic resistance" ranged from 22% in Egypt to 89% in Mexico. [11]

Among high-income countries, a number of research reports have found low level of adult public understanding regarding antimicrobial resistance. In Italy, only 9.8% of the general population knew the definition of antimicrobial resistance and only 21.2% knew when it was appropriate to use antibiotics.[12] In England, 35% of adults wrongly believed that antibiotics kill viruses or treat viral infections.[13] However, awareness does differ across high-income countries. In Sweden awareness is higher, as 80.9% did not agree that antibiotics cure common colds more quickly.[14] The reasons for why AMR awareness remains highly variable across high-income countries remains unclear.

Physician awareness surrounding antimicrobial resistance and antimicrobial stewardship remains inadequate, and unnecessary prescription of antimicrobials continues to be high. In the US, a survey of fourth-year medical students at three medical schools (University of Miami, John Hopkins University, and University of Washington) showed that a majority of students did not know the appropriate management of antimicrobial-resistant infections.[15] However, awareness does vary across high-income countries, as physicians in Canada demonstrated high levels of AMR stewardship and knowledge on antibiotics. [16]

Raising awareness about AMR in low- and middle-income countries is critical since healthcare systems may be ill-equipped to deal with outbreaks. A cross-sectional survey in Pakistan found that 41% of participants used left over antibiotics from their own or someone else's previous antibiotic course.[17] Also, the effects of AMR awareness campaign in low- and middle-income countries have been mixed, raising questions about what are the best strategies for spreading awareness. A study implementing educational activities in two Lao villages indicated that activity-related communication circulated more among privileged groups and effects on attitude were minor. [18]

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Stakeholders and Countermeasures: Global

Stakeholder	Countermeasure
World Health Organization	• World Health Organizations - the World Antibiotic Awareness Week in November since 2015. [19]
European Union	• e-bug program - online website with games and teaching resources about microbes and antibiotics for the general public. [20]
Irish Department of Health	• "Action on Antibiotics" campaign to change antibiotic prescribing and spread awareness on new guidelines for antimicrobial stewardship. However, adherence to antibiotic prescribing guidelines remains highly variable. [21]
ReAct	• ReAct supports antimicrobial awareness activities through its global branches – Africa, Asia Pacific, Europe, North America, and Latin America. Examples include raising awareness in primary school children in Kenya and workshops for the Indian Dental Association. • Reimagining Resistance – project aiming to challenge the idea of bacteria as mere causes of disease, and promote a more ecological and holistic approach to antimicrobial resistance. Bridges art and medicine to challenge our perceptions on AMR. [22] • Toolbox – online website with information and practical guidelines for raising awareness on AMR
The Antimicrobial Resistance Fighter Coalition	• A multi-sector coalition between government agencies, healthcare professionals, patients and families. The campaign collects and shares personal stories and firsthand experiences from healthcare and public health professionals, as well as survivors of antimicrobial resistance infections. [23]
Wellcome Trust/DBT Indian Alliance, World Comics India, Centre for Cellular and Molecular Biology	• "Superheroes Against Superbugs" program - During this multiday program, children took part in an interactive workshop on microbes, infections and antibiotics, building into conversations on antimicrobial resistance. The children were also encouraged to transform their own stories about antimicrobial resistance into comics and animation. The success of this program clearly demonstrates the strength of a multi-sectoral approach and the importance of raising awareness even for children, who will shape the future. [24]

AMR Alliance Japan Recommendations

- The Government should work to increase the opportunities that the general public has to learn about AMR. The Government should consider how to appropriately support informational initiatives tailored to different audiences, such as the elderly or the young, through a variety of media sources, including newspapers, magazines, television, social media, and the internet. The Government should construct a cooperative system among school doctors, school pharmacists, and school nurses at educational and childcare institutions, and work to increase opportunities to accurately and actively promote information on infectious disease prevention, including information related to AMR and vaccines
- The Government should increase the opportunities the public has to learn about the spread of infectious diseases and how they can be prevented by vaccines, disinfection practices, and so on.
- The Government should promote the further training of medical practitioners with specialized knowledge in infectious diseases (licensed specialists) that can contribute to AMR countermeasures.
- Growth in the number of medical personnel trained in therapeutic drug monitoring (TDM) and the expansion of the use of TDM for antimicrobials would help to further facilitate decisions about the appropriateness of antimicrobial use and hence, AMR countermeasures. The Government should consider supporting training and the expansion of TDM practices to more antimicrobials through revisions to the medical fee system.
- The Government should make use of the Conference on Public Awareness-raising for AMR Countermeasures and other fora to promote multi-stakeholder collaborations among medical personnel, patient advocates, insurance payers, industry, the Government, and experts on AMR, in order to reinforce current AMR educational activities. The Government should promote the creation of opportunities for community doctor associations, pharmacist associations, health centers and so on to collaborate for the promotion of awareness-raising in their communities.

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