Awareness Survey on Reforming Existing Systems to Achieve Sustainable Antimicrobial Resistance (AMR) Countermeasures: Looking Beyond the COVID-19 Pandemic

Survey items

Please answer the following questions about yourself

1. Please tell us your occupation.
    - Physician
        - For those who selected “Physician,” please share your main field of specialty.
        - ( )
    - Clinical laboratory technician
        - The following question is for respondents who selected “clinical laboratory technician.” Please select all the tests you perform. (Select all that apply)
            - Microbiological tests, immunological tests, hematological tests, pathological tests, biochemical tests, general tests (urine, stool, etc.), gene-related tests, chromosome tests
    - Pharmacist
        - The following question is for respondents who selected “pharmacist.” Do you possess a recognized specialty certification in infectious disease control (including “Board Certified Infection Control Pharmacy Specialist” or “Board Certified Pharmacist in Infection Control” from the Japanese Society of Hospital Pharmacists (JSHP); “Antimicrobial Chemotherapy Pharmacist” from the Japanese Society of Chemotherapy; “Infection Control Doctor” from the ICD System Council, etc.)?
            - Yes
            - No
    - Please share how many years you have served in the role you selected above.
        - ( ) years
2. Please select the type of healthcare facility that is your main affiliation.
    - Clinic or medical office
    - Hospital (other than university hospital)
        - 20 to 399 care beds
        - 400 or more care beds
    - University hospital or research institution
    - Health insurance pharmacy
    - Other ( )
3. Please share the postal code of your main affiliated institution. (This will be used for screening in order to avoid gathering multiple responses from the same institutions. It will not be used to identify any individual or to contact your affiliated institution, nor will it be presented publicly or be used for any other purpose.)
    - ( )

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Please answer the following questions regarding antimicrobials and related systems

4. Were the antimicrobial shortages that occurred starting in March 2019 an obstacle for your everyday activities?
    - Yes
        - This question is for respondents who replied “Yes” to question 4. What specific obstacles did you encounter during the antimicrobial shortage? (Examples: Orthopedic surgeries and anticancer chemotherapy treatments were postponed, we increased our usage of broad-spectrum antimicrobials, etc.)
            - (_____)
    - No
5. As of 2020, the prices assigned to antimicrobials designated as “Key Drugs” (which are essential pharmaceuticals for treating infectious diseases) by the Japanese Society of Chemotherapy, the Japanese Association for Infectious Diseases, the Japanese Society for Clinical Microbiology, and the Japanese Society for Infection Prevention and Control were as follows. Do you think that the prices currently assigned to antimicrobials are appropriate overall?
    - They are extremely high
    - They are high
    - They are appropriate
    - They are low
    - They are extremely low
6. In the future, do you think it will be necessary to assign higher prices to antimicrobials in order to create an environment in which they can be used in a stable manner?
    - I think it will be necessary
    - I think measures other than increasing the prices assigned to antimicrobials will be necessary
7. Did you know that several major pharmaceutical companies have withdrawn from the antimicrobial market due to poor revenue outlook or that certain companies in the U.S. declared bankruptcy, even when their products cost 100,000 yen or more per dose?
    - Yes
    - No
8. Did you know that countries like the U.K. and Sweden have launched pilot programs aiming to create new incentives for antimicrobial development?
    - I knew that
    - I did not know that
9. There are currently discussions being held on the need to establish a pull incentive system in Japan that delinks the volume of antimicrobials sold and the profits from their sales to optimize the antimicrobial business while ensuring access. Do you think such a system is necessary in Japan?
    - It is necessary
    - It is unnecessary

- I don't know

10. The budgetary requests from the Ministry of Health, Labor and Welfare (MHLW) for FY2023 include a request for 1.8 billion yen for introducing a pull incentive called the "income compensation system" on a trial basis. What do you think about this amount? (Reference: In the U.K., where a pull incentive system has already been introduced, the amount provided as an incentive is 10 million pounds per drug per year (which, at 160 yen per pound, amounts to 1.6 billion yen) over ten years.)
    - It is very high
    - It is high
    - It is appropriate
    - It is low
    - It is very low
11. A group called the AMED Drug Discovery Promotion Review Committee (which includes the Japan Agency for Medical Research and Development (AMED), the President of the Japanese Association for Infectious Diseases, the President of the Japanese Society of Chemotherapy, and members of the Japan Pharmaceutical Manufacturers Association (JPMA)) created the "List of Target Pathogens for AMR Drug Discovery Research (2021 version)." Are there any AMR bacteria included on that list that you have found difficult to treat? Also, have you encountered any infections caused by AMR bacteria that are not on the list but were difficult to treat?
    - Yes (_____)
    - AMR bacteria not on list (_____)
12. Please tell us if the facility you are affiliated with receives medical fee reimbursements for implementing infection control measures.
    - Premium for enhancing infection prevention countermeasures I
    - Premium for enhancing infection prevention countermeasures II
    - Premium for enhancing infection prevention countermeasures III
    - Premium for enhancing outpatient infection prevention measures
    - Application pending
    - Reimbursement was eliminated in the FY2022 revision
    - Unknown
    - N/A
13. Are current medical fee reimbursements sufficient to cover the costs of infection control measures for AMR bacteria?
    - They are sufficient
    - They are insufficient (Reason:)
14. To build or maintain systems for detecting and monitoring AMR bacteria, which of the following items does your institution require the most?
    - Tighten standards for calculating infection control reimbursements (such as by clarifying full-time staff in writing)

- Increase the number of microbiology technicians on staff
- Expand testing equipment
- Other ( )
- N/A

15. Does your facility conduct its own nucleic acid amplification testing?
    - Yes
    - No (It is outsourced)
    - No (It is not conducted)
    - I don't know
16. Since December 2019, has your institution made any investments to improve its testing infrastructure to respond to COVID-19 (by purchasing more NAAT equipment, hiring more clinical technologists, etc.)?
    - It has
    - It has not
    - I don't know
17. For those who answered "Yes," please share the source of the investment.
    - Subsidies
    - Self-funded
    - Both
    - I don't know
18. For those who answered "Yes," please share how the investments were used.
    - Purchase of stand-alone testing equipment for the sole purpose of COVID-19
    - Purchase of multipurpose NAAT devices (COVID-19 and influenza, etc.)
    - Purchase of multi-parameter NAAT devices (multiplex PCR)
    - Increasing the number of clinical laboratory technicians on staff
    - Other ( )
    - I don't know
19. Please tell us how frequently each NAAT device at your facility was used to test for COVID-19 over the past four months.
    - 25 or more samples per day
    - 12 to 24 samples per day
    - 1 to 11 samples per day
    - 4 to 6 samples per week
    - 1 to 3 samples per week
    - 1 to 4 samples per month
    - 0 to 3 samples per month
    - I don't know
    - Testing is not conducted
20. Is your facility using that infrastructure to test for infectious diseases other than COVID-19?

- Yes
- No
- I don't know

21. **<u>In the future,</u>** if the number of tests your facility conducts for COVID-19 decreases, are there plans to use the NAAT devices for AMR control?
    - It is unclear
    - At certain times ( ) (Example: Before surgical operations)
    - For certain people ( ) (Example: ICU patients)
    - For certain microorganisms ( ) (Example: MRSA)
22. Are there any tests you would like to see introduced in the future that utilize NAAT devices for AMR control?
    - ( )
    - None in particular
23. Do you think establishing a system utilizing NAATs for rapid antibiotic susceptibility testing (AST) will contribute to antimicrobial stewardship?
    - I think it will
    - I do not think it will
    - I don't know
24. Are results from rapid tests performed at your facility being reported to the clinic smoothly?
    - They are
    - They are not
        - (Reason:)
    - I don't know
25. Do you think establishing a system utilizing NAATs for rapid AMR bacteria testing will contribute to decreasing the number of AMR infections?
    - I think it will
    - I do not think it will
    - I think we already have effective testing methods (Example:)
    - I don't know
26. Regarding NAAT-based systems currently in use at your facility, is there anything that you are dissatisfied with or find concerning?
    - Yes
    - No
27. (For those who answered "Yes") If possible, please tell us about the main problem that concerns you. (100 words or less)
    - _____
28. Does your facility <u>utilize NAATs</u> to conduct active surveillance for AMR bacteria?
    - Active surveillance is effective, so we do
    - Active surveillance is effective, so we are conducting it with a method that does not utilize NAATs (Method:)
    - I think active surveillance is effective and would like to conduct it, but cannot (Reason:)
    - I do not think active surveillance is effective (Reason:)
    - I do not know about active surveillance

29. Did you know that NAATs are not suitable for detecting AMR organisms for certain types of infections (endemic fungi, asymptomatic bacteriuria, etc.)?
    - Yes
    - No

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