

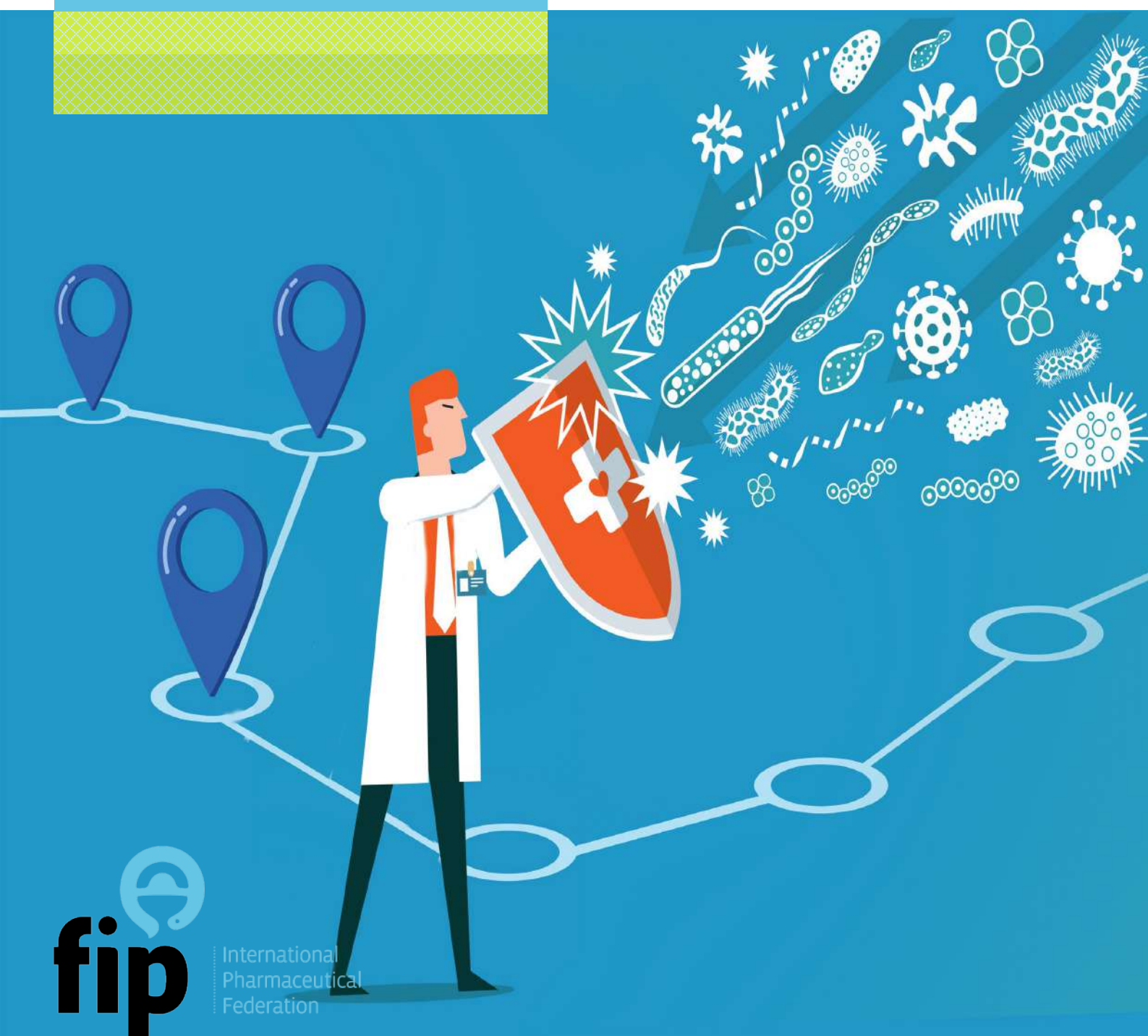
FIP Antimicrobial Resistance (AMR) Regional Roadmaps 2024-2028

For FIP regional forums
and FIP member
organisations in Europe

2024



FIP Development Goals



International
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Colophon

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1 Introduction

1.1 Background

Antimicrobial resistance (AMR) is a serious global health problem, threatening the effective prevention and treatment of a growing number of infections caused by bacteria, parasites, viruses, and fungi that have become resistant to commonly used medicines.¹ Although the patterns of AMR have considerable variation globally,² AMR should be a concern for every country.

According to the World Health Organization (WHO), every country should have a national action plan on AMR, to include avoiding overuse and misuse of antibiotics and increasing healthcare professionals' awareness and understanding of AMR while providing effective communication, education and training.³ At the 79th United Nations General Assembly (UNGA) High-Level Meeting on AMR in 2024, countries committed to ensuring that at least 70% of antibiotics used for human health are from the WHO Access Group Antibiotics, which have relatively minimal side effects and a lower potential to cause AMR.⁴ The International Pharmaceutical Federation (FIP) also focuses on this issue while considering pharmacists' contribution to combating AMR. Therefore, [FIP Development Goal 17](#): Antimicrobial Stewardship is one of the [21 FIP Development Goals](#) as a primary sole focus.

FIP has long advocated for AMR minimisation at the global level. Already in 2014, FIP was pleased to contribute to the [World Health Organization's \(WHO's\) consultations](#) to develop the [Global action plan \(GAP\) on AMR](#) that was subsequently adopted by the 68th World Health Assembly. Since then, FIP has been [collaborating with the WHO](#) on the plan's implementation. For example, FIP was one of the reviewers of the [WHO Competency Framework for Health Workers' Education and Training on AMR](#). Consequently, FIP contributed to the WHO [Health Workers' Education and Training on AMR: Curriculum Guide](#). FIP's contribution on both publications is acknowledged.

Furthermore, FIP represents voices of pharmacists at the World Health Assembly. At the 76th World Health Assembly, FIP highlighted [pharmacists' role in combating AMR](#) via a statement under the global strategy on infection prevention and control. At the 74th World Health Assembly in 2021, FIP [reiterated to ministers](#) that the pharmacy profession around the world is committed to being part of the solution to AMR. FIP advocates for pharmacists' important role in the education of healthcare professionals and the public to combat AMR. Additionally, FIP works with governments, organisations, associations, policymakers, and pharmacists in all sectors for AMR mitigation efforts, including antimicrobial stewardship (AMS) programmes. FIP has delivered many resources, including webinars, toolkits and reports, to highlight the global issue of AMR.

One recent work from 2023 is the [FIP Statement of Policy on Mitigating AMR through AMS](#). With this statement, FIP aligns its actions with the "One health" approach, and strongly endorses the WHO's GAP on AMR as the blueprint to address AMR nationally and globally.

Part 1 recommends 27 actions for governments and policymakers, in collaboration with member organisations, with Part 2 there are 26 recommended actions for pharmacists, amounting to 53 actions in total. According to FIP, these actions are pivotal to combating AMR. However, it was not clear if and how member organisations and regional forums have mobilised these actions.

FIP has developed [AMR regional roadmaps for 2020-2024](#), aiming to drive AMR actions in a new decade. This was based on a survey conducted at FIP Virtual Congress in 2020. The top three priorities for all regions were identified through this survey for 2020-2024.

Following the 2020-2024 AMR Regional Roadmaps and FIP Policy Statement on AMR in 2023, FIP developed an online questionnaire to identify top priorities and actions for 2024-2028 for the regional forums and, given there is no FIP regional forum for the WHO European Region, the FIP member organisations in the European Region were used as the sample. The results of the survey were used to develop the AMR Regional Roadmaps for 2024-2028.

1.2 Method

The survey included two parts and 53 actions, based on the [FIP Statement of Policy Mitigating Antimicrobial Resistance \(AMR\) through Antimicrobial Stewardship \(AMS\)](#). The policy statement includes various actions for governments,

policymakers, member organisations and pharmacists relating to establishing governance and regulations, embracing the One Health approach, monitoring antimicrobial use and consumption, and leading education and awareness campaigns. Moreover, it includes necessary actions for practice documentation, prescription pattern, and consumption observation for real and relevant research, as well as following 'green pharmacy'⁵ principles for antimicrobials.

In the first part of the survey, respondents were asked to rate the presence of the AMR and AMS related actions for governments and policymakers in collaboration with member organisations in the country. In the second part of the survey, the respondents were asked to prioritise AMR and AMS related actions for pharmacists that should be implemented in their country in the next four years (2024-2028). There were 53 questions in total. There was an option to select in the survey the activities that have been implemented in the country. The responses were collected based on the respondents' point of view and knowledge. The [FIP AMR Commission](#) reviewed the survey and agreed on the distribution. The regional forums and the FIP member organisations from the European Region were invited to the regional engagement meetings to discuss survey questions, AMR and AMS related initiatives and answer any questions they might have prior to participating in the survey.

The survey was distributed in April-June 2024 and implemented via the QuestionPro survey platform. This was an anonymous survey and no identifiers have been collected. Participation was voluntary and a reminder was sent one month after the initiation of the survey.

Only Executive Committee members of the regional forums and FIP member organisations from the European Region were invited to answer the survey. They were asked to respond from the perspective of their regions or countries and were allowed to forward the invitation to those who had better knowledge about AMR and AMS related actions in their respective regions or countries. The roadmaps aim to guide regional forums to develop the necessary AMR and AMS actions in the regions, so the survey was focused on the forums rather than FIP member organisations. This approach was supported by that fact that the majority of the regional forums have previously indicated FIP Development Goal 17 (Antimicrobial Stewardship) to be a top priority. However, as there is no regional pharmaceutical forum for the European Region, FIP member organisations in the European Region were invited to take part in the survey in order to produce roadmaps for all six regions.

Most well established AMR and AMS actions for governments and policymakers, in collaboration with member organisations in the regions and globally, were determined based on the total high percentage from the good and excellent ratings. The actions that need improvement were determined based on the total high percentage from very poor and poor ratings. The top priorities were determined based on the percentage from "very high priority" and "above average high priority" ratings.

2 Results

A total of 34 responses from 22 countries were obtained from various regions (see Figure 1): Four responses from the African Region (African Pharmaceutical Forum); six responses from the Americas Region (Pharmaceutical Forum of the Americas); four responses from the Eastern Mediterranean Region (Eastern Mediterranean Pharmaceutical Forum); two responses from the South East Asia Region (South East Asian Pharmaceutical Forum); and, one response from the Western Pacific Region (Western Pacific Pharmaceutical Forum). Since FIP does not have a regional forum in the European Region, we surveyed 68 FIP member organisations from Europe and received 17 answers.

Responses were received from 22 countries: Australia, Bosnia & Herzegovina, Bulgaria, Costa Rica, Denmark, Gambia, Ghana, United Kingdom, Hungary, India, Italy, Lebanon, Montenegro, Netherlands, Norway, Paraguay, Portugal, Serbia, Switzerland, Uganda, United Arab Emirates, and Uruguay.

Table 1. Distribution of responses

Region	Number of responses (%)	Name of the regional forum	Respective countries from the forum
Africa	12%	African Pharmaceutical Forum	Gambia, Ghana, Uganda
Americas	18%	Pharmaceutical Forum of the Americas	Costa Rica, Paraguay, Uruguay
Eastern Mediterranean	12%	Eastern Mediterranean Region Pharmaceutical Forum	Lebanon, United Arab Emirates
European	50%	Member organisations, as regional forum not available	Bosnia & Herzegovina, Bulgaria, Denmark, United Kingdom, Hungary, Italy, Montenegro, Netherlands, Norway, Portugal, Serbia, Switzerland
South East Asia	6%	South East Asian Region Pharmaceutical Forum	India
Western Pacific	3%	Western Pacific Pharmaceutical Forum	Australia

Table 2 demonstrates the overall rating of the presence of AMR (antimicrobial resistance) and AMS (antimicrobial stewardship) actions for governments and policymakers in collaboration with member organisations in the country from Part 1 of the survey, which includes input from 34 representatives in 22 countries across regions. The results indicate that the most well established AMR and AMS actions **for governments and policymakers, in collaboration with member organisations**, in the regions were:

1. Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems. (71%)
2. Enforcing regulations preventing the dispensing and sale or supply of antimicrobial medicines without the prescription or order of an authorised prescriber based on the local regulations. (62%)
3. Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality. (59%)
4. Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections, and ensuring that all communities and healthcare facilities have access to such programmes. (53%)
5. Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing, dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR. (53%)

However, there is a need for improvement in the following areas:

1. Advocating international, collective and alternative financial models to incentivise the research and development of new antimicrobials and ensure equitable access to all antimicrobials for those in need.

2. Supporting the discovery and development of new cost-effective antimicrobial medicines, alternatives to antimicrobials, and research into improved use of existing antimicrobials, including new combinations.
3. Promoting the adaptability of antimicrobial (including fixed dose combinations) pack sizes according to their course length and advocate against irrational fixed dose combinations.

Table 2. Presence of AMR and AMS actions in the countries, according to the survey respondents

Statements	Very Poor	Poor	Average	Good	Excellent	I don't know
Adapting and adopting the WHO Access, Watch, Reserve (AWaRe) categorisation and Antibiotic Book into the country's standard treatment guidelines and essential medicines list.	2.9%	20.6%	32.4%	14.7%	23.5%	5.9%
Advocating international, collective and alternative financial models to incentivise the research and development of new antimicrobials and ensure equitable access to all antimicrobials for those in need.	2.9%	47.1%	14.7%	20.6%	8.8%	5.9%
Collaborating with healthcare professionals and veterinary societies and associations to develop and facilitate the implementation of educational and behavioural interventions that will promote appropriate antimicrobial prescribing, raise awareness of AMR and support AMS in hospitals and the community.	5.9%	23.5%	23.5%	26.5%	11.8%	8.8%
Conducting public health education campaigns that promote the responsible use of antimicrobial medicines and thereby support health literacy.	0.0%	23.5%	26.5%	32.4%	17.6%	0.0%
Demonstrating political will and commitment by mobilising relevant national ministries and departments to collaboratively improve the capacities of their national systems to address AMR in the "One Health" context.	5.9%	2.9%	35.3%	32.4%	17.6%	5.9%
Designing and implementing robust, representative national and international surveillance programmes for monitoring and reporting patterns of antimicrobial medicine use and resistance in humans, animals (livestock and companion), plants and the environment.	0.0%	11.8%	41.2%	38.2%	5.9%	2.9%
Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing, dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR.	2.9%	17.6%	23.5%	32.4%	20.6%	2.9%
Developing and implementing a "return and disposal" programme for unused or expired antimicrobial medicines.	17.6%	20.6%	14.7%	38.2%	8.8%	0.0%
Developing and implementing AMS programmes for the responsible use and disposal of antimicrobial medicines in humans, animals, plants and the environment.	0.0%	20.6%	35.3%	29.4%	11.8%	2.9%
Developing appropriate adult, child and (livestock and companion) animal immunisation programmes for diseases that are vaccine-preventable.	0.0%	14.7%	26.5%	11.8%	32.4%	14.7%
Developing, funding, implementing, monitoring and evaluating national action plans to contain AMR and formally involving all key stakeholders, including healthcare professionals, the private sector, academia and civil society.	2.9%	14.7%	32.4%	23.5%	23.5%	2.9%
Enforcing regulations preventing the dispensing and sale or supply of antimicrobial medicines without the prescription or order of an authorised prescriber based on the local regulations.	5.9%	26.5%	5.9%	29.4%	32.4%	0.0%

Statements	Very Poor	Poor	Average	Good	Excellent	I don't know
Ensuring availability and access to relevant education on antimicrobial use for the whole of society.	0.0%	26.5%	23.5%	41.2%	8.8%	0.0%
Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.	2.9%	8.8%	26.5%	38.2%	20.6%	2.9%
Ensuring that essential antimicrobials will be maintained on the market with contingency stock level arrangements and alternative production by pharmacists enabled where necessary.	5.9%	11.8%	32.4%	26.5%	14.7%	8.8%
Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.	0.0%	17.6%	11.8%	35.3%	35.3%	0.0%
Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections and ensuring that all communities and healthcare facilities have access to such programmes.	2.9%	5.9%	26.5%	26.5%	26.5%	11.8%
Facilitating the registration of new or existing antimicrobials and providing appropriate economic incentives to encourage their development and commercial availability.	8.8%	11.8%	29.4%	29.4%	14.7%	5.9%
Facilitating the registration of new or existing antimicrobials across countries and appropriate economic incentives for transferring technology to other manufacturers to encourage their development and commercial availability.	2.9%	26.5%	26.5%	20.6%	2.9%	20.6%
Including AMS in pre- and in-service education and training and promote interprofessional learning and collaboration.	2.9%	23.5%	38.2%	17.6%	11.8%	5.9%
Promoting the adaptability of antimicrobial (including fixed dose combinations) pack sizes according to their course length and advocate against irrational fixed dose combinations.	2.9%	41.2%	32.4%	8.8%	8.8%	5.9%
Promoting the inclusion of the concept of AMR, its impact, and measures to reduce its possible emergence and spread in basic education curricula.	5.9%	14.7%	38.2%	26.5%	8.8%	5.9%
Regulating and monitoring the rational and appropriate consumption of antimicrobials, routes of access and data availability in humans and animals, plants and the environment.	2.9%	17.6%	41.2%	26.5%	8.8%	2.9%
Strengthening and enforcing legislative and regulatory controls applicable to all sectors in relation to the life cycle of antimicrobial medicines, in particular, authorisations to market, promote, import, export, prescribe, dispense, correctly store, dispose and otherwise supply antimicrobial medicines including via protocols, internet or telecommunications (telemedicine).	2.9%	17.6%	35.3%	20.6%	11.8%	11.8%
Supporting the adoption of effective antimicrobial medicines disposal and biosecurity practices to prevent the contamination of soil and water sources with antimicrobial residues and antimicrobial-resistant microorganisms and ensure that all industries and farms have access to such programmes.	0.0%	20.6%	38.2%	14.7%	8.8%	17.6%
Supporting the development and implementation of biosecurity and animal husbandry measures to encourage the discontinuation of the use of antimicrobial medicines for growth promotion, prophylaxis and metaphylaxis.	0.0%	14.7%	32.4%	11.8%	11.8%	29.4%
Supporting the discovery and development of new cost-effective antimicrobial medicines, alternatives to antimicrobials, and	11.8%	38.2%	23.5%	14.7%	5.9%	5.9%

Statements	Very Poor	Poor	Average	Good	Excellent	I don't know
research into improved use of existing antimicrobials, including new combinations.						

Table 3 presents the overall prioritisation of AMR (antimicrobial resistance) and AMS (antimicrobial stewardship) actions for pharmacists that should be implemented in the country in the next four years (2024-2028) from Part 2 of the survey, which includes input from 34 representatives in 22 countries across regions. According to the results, the most well established AMR and AMS actions **for pharmacists** in the regions were:

1. Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections, and inform the choice of empirical antimicrobials, where appropriate, as part of clinical pathways. (68%)
2. Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible. (65%)
3. Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records. (65%)
4. Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship. (62%)
5. Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities. (62%)
6. Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively. (62%)
7. Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations. (62%)
8. Conducting research on all facets of AMR and AMS and to apply the findings. (62%)

However, there is a need for improvement in the following actions:

1. Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.
2. Monitoring the use of antimicrobials and adherence to treatment regimens by patients.
3. Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.
4. Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.
5. Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principles throughout the lifecycle of antibiotics.
6. Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.

Table 3. Prioritisation of AMR (antimicrobial resistance) and AMS (antimicrobial stewardship) actions according to the survey respondents

Statements	Very low priority	Below average priority	Average priority	Above average priority	Very high priority	Already done
Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.	5.9%	2.9%	20.6%	11.8%	23.5%	35.3%
Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.	2.9%	2.9%	20.6%	14.7%	38.2%	20.6%

Statements	Very low priority	Below average priority	Average priority	Above average priority	Very high priority	Already done
Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.	2.9%	8.8%	17.6%	14.7%	38.2%	17.6%
Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.	2.9%	8.8%	17.6%	32.4%	29.4%	8.8%
Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.	2.9%	11.8%	8.8%	14.7%	32.4%	29.4%
Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.	0.0%	8.8%	11.8%	14.7%	41.2%	23.5%
As part of the national professional pharmacy organisations, working with governments to ensure compliance by pharmacists with legislation applicable to the supply of antimicrobial medicines.	2.9%	5.9%	14.7%	17.6%	38.2%	20.6%
As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.	5.9%	0.0%	26.5%	11.8%	38.2%	17.6%
Conducting research on all facets of AMR and AMS and to apply the findings.	8.8%	8.8%	17.6%	26.5%	35.3%	2.9%
Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities.	2.9%	8.8%	11.8%	17.6%	44.1%	14.7%
Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principles throughout the lifecycle of antibiotics.	8.8%	5.9%	29.4%	23.5%	29.4%	2.9%
Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.	5.9%	5.9%	14.7%	14.7%	47.1%	11.8%
Encouraging the implementation of AMS programmes at local, regional and national levels, where necessary.	2.9%	5.9%	23.5%	17.6%	41.2%	8.8%
Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.	0.0%	8.8%	17.6%	17.6%	50.0%	5.9%
Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.	8.8%	5.9%	11.8%	14.7%	41.2%	17.6%
Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.	5.9%	2.9%	11.8%	2.9%	38.2%	28.2%
Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.	0.0%	5.9%	17.6%	11.8%	52.9%	11.8%
Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.	5.9%	11.8%	20.6%	29.4%	23.5%	8.8%

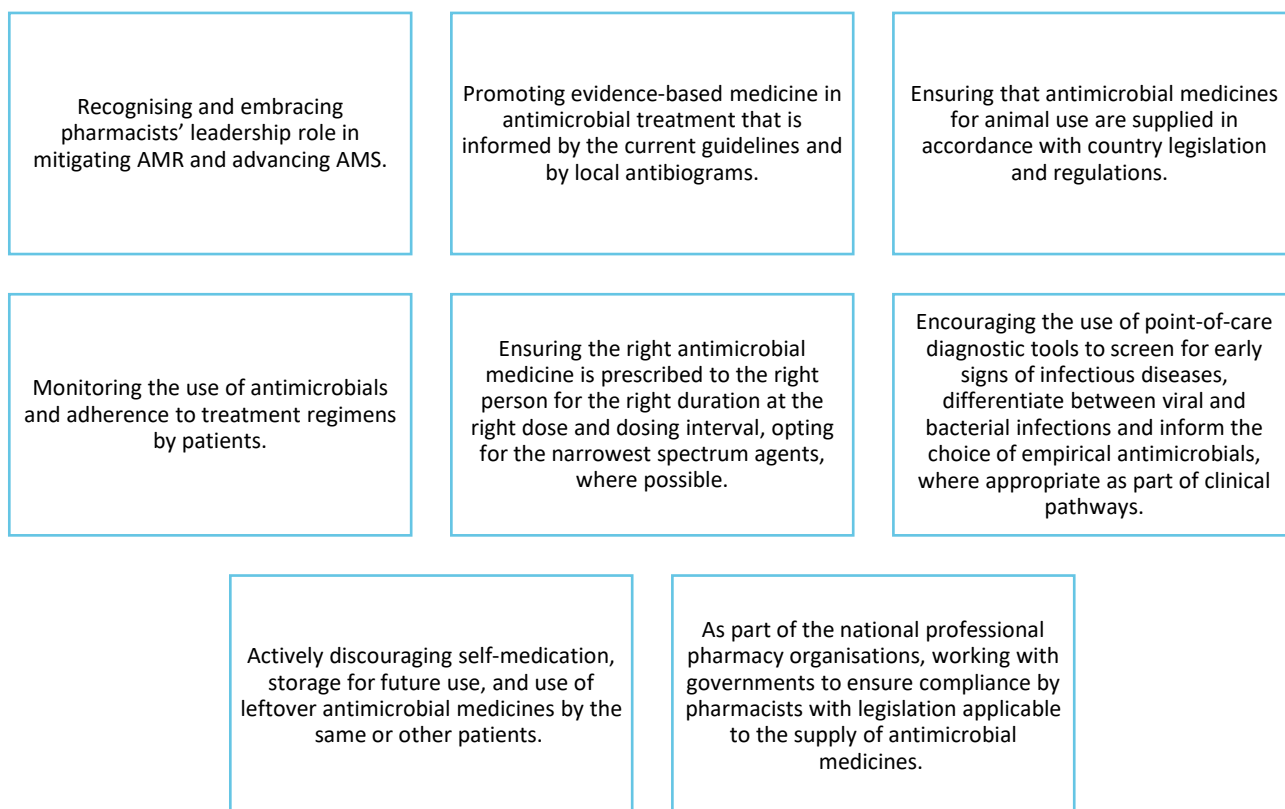
Statements	Very low priority	Below average priority	Average priority	Above average priority	Very high priority	Already done
Monitoring the use of antimicrobials and adherence to treatment regimens by patients.	2.9%	11.8%	20.6%	11.8%	47.1%	5.9%
Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.	0.0%	5.9%	26.5%	17.6%	44.1%	5.9%
Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.	2.9%	11.8%	11.8%	17.6%	41.2%	14.7%
Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.	8.8%	2.9%	11.8%	35.3%	29.4%	11.8%
Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.	2.9%	8.8%	20.6%	14.7%	35.3%	17.6%
Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals, livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.	0.0%	11.8%	29.4%	23.5%	29.4%	5.9%
Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.	0.0%	11.8%	20.6%	5.9%	47.1%	14.7%
Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.	8.8%	5.9%	17.6%	17.6%	32.4%	17.6%

The Appendices section of this report outlines the regional assessment of top priorities, activities that have been done in the region, and actions for pharmacists to be implemented in the next four years.

2.1 African Region: African Pharmaceutical Forum

Figure 1 demonstrates the top priorities for pharmacists and policy makers, as expressed by the regional forum, to be implemented in the next 2024-2028 term.

Figure 1: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the African Region



Activities that have been already done in specific countries including Gambia, Ghana or Uganda in the African Region:

1. Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.
2. As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.
3. Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.
4. Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.
5. Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.
6. Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.

Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

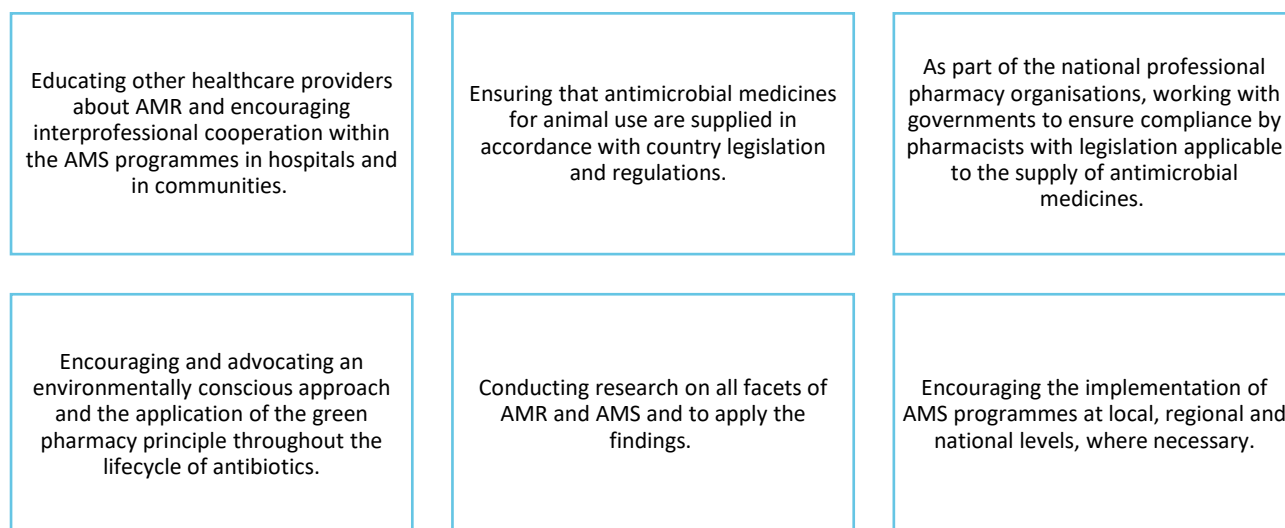
1. Facilitating the registration of new or existing antimicrobials and providing appropriate economic incentives to encourage their development and commercial availability.

2. Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.
3. Developing and implementing a "return and disposal" programme for unused or expired antimicrobial medicines.

2.2 Americas Region: Pharmaceutical Forum of the Americas

Figure 2 demonstrates the top priorities for pharmacists and policy makers, as expressed by the regional forum, to be implemented in the next 2024-2028 term.

Figure 2: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the Americas Region



Activities that have been already done in specific countries including Costa Rica, Paraguay or Uruguay in the Americas Region:

1. Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.
2. Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.
3. Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.
4. Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.
5. Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.
6. Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.
7. As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.
8. Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.
9. Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.
10. Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.
11. Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.
12. Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.

13. Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals, livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.
14. Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.
15. Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.
16. Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.
17. Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.
18. Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.

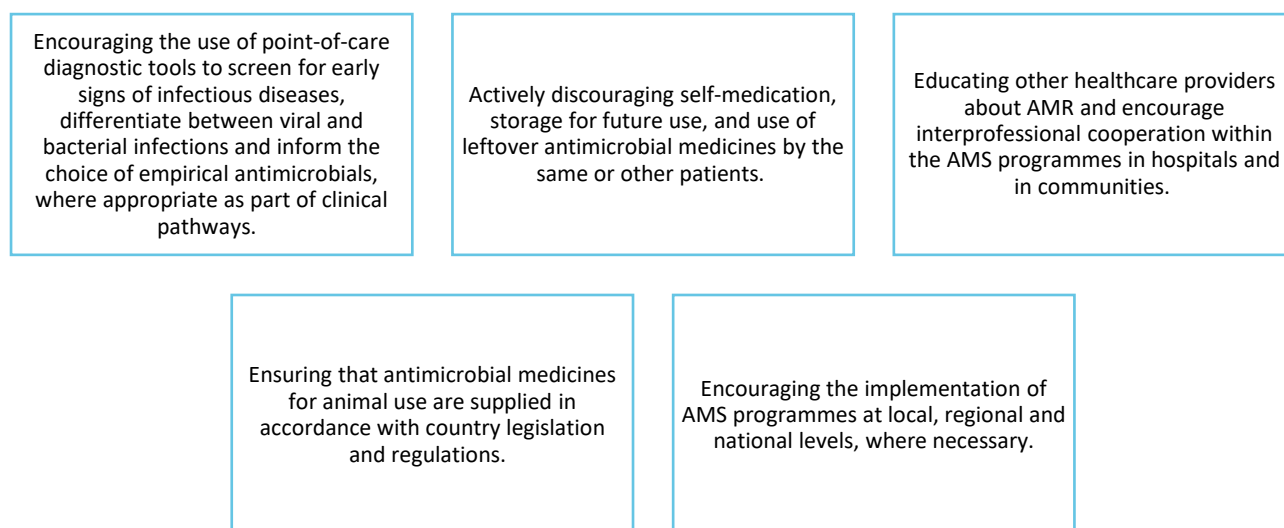
Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

1. Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.
2. Developing appropriate adult, child and (livestock and companion) animal immunisation programmes for diseases that are vaccine-preventable.
3. Promoting the inclusion of the concept of AMR, its impact, and measures to reduce its possible emergence and spread in basic education curricula.

2.3 Eastern Mediterranean Region: Eastern Mediterranean Pharmaceutical Forum

Figure 3 demonstrates the top priorities for pharmacists and policy makers, as expressed by the regional forum, to be implemented in the next 2024-2028 term.

Figure 3: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the Eastern Mediterranean Region



Activities that have been already done in specific countries including Lebanon or United Arab Emirates in the Eastern Mediterranean Region:

1. Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.
2. Monitoring the use of antimicrobials and adherence to treatment regimens by patients.
3. Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.
4. Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.
5. Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.
6. Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.

Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

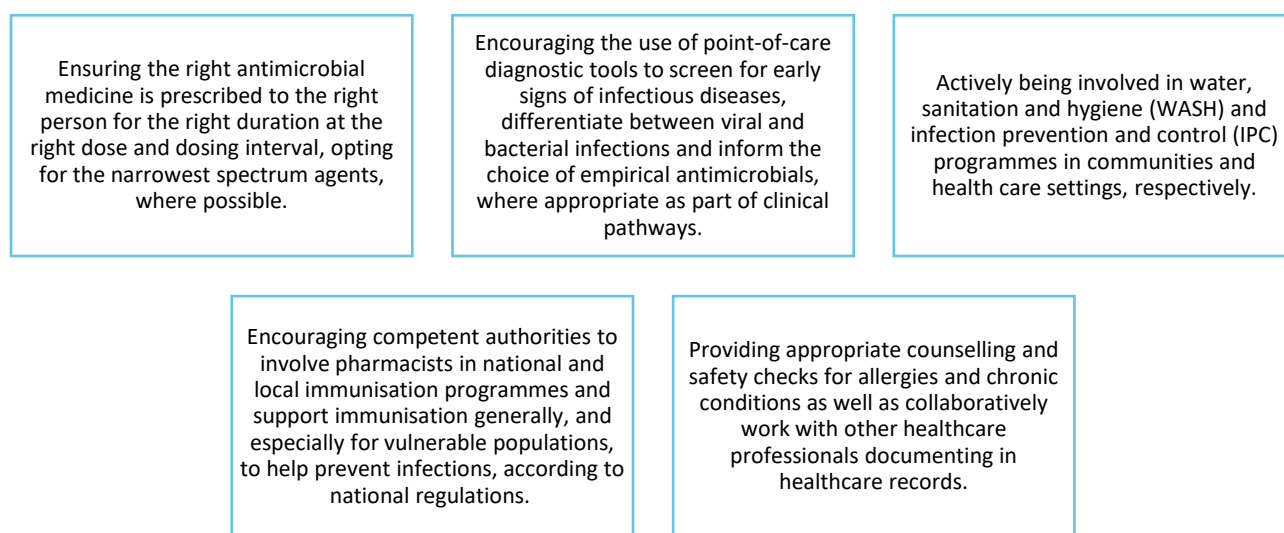
1. Strengthening and enforcing legislative and regulatory controls applicable to all sectors in relation to the life cycle of antimicrobial medicines, in particular, authorisations to market, promote, import, export, prescribe, dispense, correctly store, dispose and otherwise supply antimicrobial medicines including via protocols, internet or telecommunications (telemedicine).
2. Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.
3. Designing and implementing robust, representative national and international surveillance programmes for monitoring and reporting patterns of antimicrobial medicine use and resistance in humans, animals (livestock and companion), plants and the environment.

4. Developing and implementing AMS programmes for the responsible use and disposal of antimicrobial medicines in humans, animals, plants and the environment.
5. Developing appropriate adult, child and (livestock and companion) animal immunisation programmes for diseases that are vaccine-preventable.
6. Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing, dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR.
7. Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.
8. Promoting the inclusion of the concept of AMR, its impact, and measures to reduce its possible emergence and spread in basic education curricula.
9. Including AMS in pre- and in-service education and training and promote interprofessional learning and collaboration.

2.4 European Region

As explained earlier in the document, FIP does not have a regional forum in the WHO European Region. Instead, a total of 17 responses were received from the FIP member organisations in the European Region. Figure 4 demonstrates the top priorities for pharmacists and policy makers to be implemented in the next 2024-2028 term.

Figure 4: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the European Region



Activities that have already been done in specific countries including Bosnia & Herzegovina, Bulgaria, Denmark, United Kingdom, Hungary, Italy, Montenegro, Netherlands, Norway, Portugal, Serbia or Switzerland in the European Region:

1. Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.
2. Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.
3. Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.
4. Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.
5. Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.
6. Monitoring the use of antimicrobials and adherence to treatment regimens by patients.
7. As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.
8. Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.
9. Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.
10. Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.
11. Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities.
12. Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.

13. Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.
14. As part of the national professional pharmacy organisations, working with governments to ensure compliance by pharmacists with legislation applicable to the supply of antimicrobial medicines.
15. Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.
16. Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals, livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.
17. Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.
18. Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.
19. Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.
20. Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.
21. Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principles throughout the lifecycle of antibiotics.
22. Conducting research on all facets of AMR and AMS and to apply the findings.
23. Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.
24. Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.
25. Encouraging the implementation of AMS programmes at local, regional and national levels, where necessary.

Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

1. Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections and ensuring that all communities and healthcare facilities have access to such programmes.
2. Enforcing regulations preventing the dispensing and sale or supply of antimicrobial medicines without the prescription or order of an authorised prescriber based on the local regulations.
3. Developing and implementing AMS programmes for the responsible use and disposal of antimicrobial medicines in humans, animals, plants and the environment.
4. Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing, dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR.
5. Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.
6. Conducting public health education campaigns that promote the responsible use of antimicrobial medicines and thereby support health literacy.

2.5 South East Asia Region: South East Asian Pharmaceutical Forum

Figure 5 demonstrates the top priorities for pharmacists and policy makers, as expressed by the regional forum, to be implemented in the next 2024-2028 term.

Figure 5: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the South East Asia Region



Activities that have been already done in India in the South East Asia Region:

1. Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.
2. Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.

Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

1. Demonstrating political will and commitment by mobilising relevant national ministries and departments to collaboratively improve the capacities of their national systems to address AMR in the "One Health" context.

2. Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections and ensuring that all communities and healthcare facilities have access to such programmes.
3. Developing, funding, implementing, monitoring and evaluating national action plans to contain AMR and formally involving all key stakeholders, including healthcare professionals, the private sector, academia and civil society.
4. Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.
5. Ensuring availability and access to relevant education on antimicrobial use for the whole of society.

2.6 Western Pacific Region: Western Pacific Pharmaceutical Forum

Figure 6 demonstrates the top priorities for pharmacists and policy makers, as expressed by the regional forum, to be implemented in the next 2024-2028 term.

Figure 6: Top AMR and AMS priorities that pharmacists should implement in the next four years (2024-2028) in the Western Pacific Region

Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.	Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.	Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.
Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.	Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.	Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.
Monitoring the use of antimicrobials and adherence to treatment regimens by patients.	As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.	Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.
Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.	Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.	Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities.
Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.	Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals, livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.	Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.
Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.	Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.	Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principle throughout the lifecycle of antibiotics.

Activities that have been already done in Australia in the Western Pacific Region:

1. Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.
2. Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.
3. As part of the national professional pharmacy organisations, working with governments to ensure compliance by pharmacists with legislation applicable to the supply of antimicrobial medicines.
4. Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.
5. Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.
6. Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.
7. Encouraging the implementation of AMS programmes at local, regional and national levels, where necessary.

Presence of common AMR and AMS actions for governments and policymakers in collaboration with member organisations in the region:

1. Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections and ensuring that all communities and healthcare facilities have access to such programmes.
2. Enforcing regulations preventing the dispensing and sale or supply of antimicrobial medicines without the prescription or order of an authorised prescriber based on the local regulations.
3. Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.
4. Adapting and adopting the WHO Access, Watch, Reserve (AWaRe) categorisation and Antibiotic Book into the country's standard treatment guidelines and essential medicines list.
5. Developing appropriate adult, child and (livestock and companion) animal immunisation programmes for diseases that are vaccine-preventable.
6. Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing, dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR.
7. Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.
8. Promoting the adaptability of antimicrobial (including fixed dose combinations) pack sizes according to their course length and advocate against irrational fixed dose combinations.

3 Conclusions

Engagement with FIP regional forums is one of the priority mechanisms to increase collaboration and awareness about FIP activities and to advance pharmacy worldwide. One of the key topics is antimicrobial resistance (AMR) and antimicrobial stewardship (AMS), as the related Development Goal 17 was selected as a priority in five of the six regions according to the Global Pharmaceutical Observatory (GPO)'s FIP DG prioritisation exercise including member organisations in 2024. The engagement meetings with the regional forums and member organisations in the European Region was useful to discuss survey questions and understand how FIP can support its regional forums to identify and implement actions regarding AMR and AMS. Following up on the engagement meetings, the survey helped us to obtain information from the FIP regional forums. The FIP Statement of Policy Mitigating AMR through AMS was used as a basis to develop the survey questions.

The results of this survey demonstrate that, according to FIP regional forums and the respondents from the FIP member organisations in the European Region, various actions from the FIP Statement of Policy Mitigating AMR through AMS have been implemented across the regions. Although we are aware that the results cannot be generalised due to a small sample size, the results can be used as a starting point for measuring implementation more broadly.

Key priority areas have been identified and FIP is keen to support regional forums and the FIP member organisations in the European Region to close the identified gaps in actions. These are:

- Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, to differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways. (68%)
- Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible. (65%)
- Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records. (65%)
- Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship. (62%)
- Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities. (62%)
- Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively. (62%)
- Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations. (62%)
- Conducting research on all facets of AMR and AMS and to apply the findings. (62%)

The priority action which has the highest percentage of ratings is “Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.” It is stated as a priority in five out of six regions. It shows that the challenge for appropriate diagnosis to differentiate viral versus bacterial infections remains as a worldwide issue. The other top priority actions include optimisation of antimicrobial use such as appropriate dose, duration and diagnosis. The pharmacist's consultation on safe antimicrobial use is also given importance. These actions highlight the need for pharmacists to ensure rational antibiotic use in the community and health care settings. Moreover, prioritisation of WASH and IPC urges multidisciplinary actions to minimise AMR. Finally, education and research on AMR and AMS are among the priorities where pharmacists, organisations, policy makers and governments can make a difference.

This report can be used to provide general information about the existing and planned activities for AMR and AMS related issues. It can also help to build on needs based actions. We hope that after using this FIP AMR Regional Roadmap 2024-2028, regional forums and FIP member organisations in the European Region will strengthen their AMS activities and will be able to reduce antimicrobial consumption and resistance in the future.

4 References

1. Sakeena MHF, Bennett AA, McLachlan AJ. Enhancing pharmacists' role in developing countries to overcome the challenge of antimicrobial resistance: a narrative review. *Antimicrob Resist Infect Control*. 2018; 7: 63. Available from: <https://doi.org/10.1186/s13756-018-0351-z>. Accessed on 16 October 2024.
2. Antimicrobial Resistance: Tackling a crisis for the health and wealth of nations. Available from: https://amr-review.org/sites/default/files/AMR%20Review%20Paper%20-%20Tackling%20a%20crisis%20for%20the%20health%20and%20wealth%20of%20nations_1.pdf Accessed on 16 October 2024.
3. WHO Global action plan on antimicrobial resistance. Available from: http://apps.who.int/iris/bitstream/10665/193736/1/9789241509763_eng.pdf?ua=1. Accessed on 16 October 2024.
4. World leaders commit to decisive action on antimicrobial resistance. Available from: <https://www.unep.org/news-and-stories/press-release/world-leaders-commit-decisive-action-antimicrobial-resistance>. Accessed on 16 October 2024.
5. FIP statement of policy on environmentally sustainable pharmacy practice: Green pharmacy. Available from: <https://www.fip.org/file/1535>. Accessed on 17 October 2024.

5 Appendices

Appendix 1. Overall top priorities in each region

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.						✓
Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.	✓		✓		✓	✓
Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.						
Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.				✓		✓
Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.						✓
Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.					✓	✓
As part of the national professional pharmacy organisations, working with governments to ensure compliance by pharmacists with legislation applicable to the supply of antimicrobial medicines.	✓	✓				
As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.					✓	✓
Conducting research on all facets of AMR and AMS and to apply the findings.		✓				
Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities.		✓	✓			
Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principles throughout the lifecycle of antibiotics.		✓				✓
Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.				✓		

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Encouraging the implementation of AMS programmes at local, regional and national levels, where necessary.		✓	✓			
Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.	✓		✓	✓	✓	✓
Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.	✓	✓	✓		✓	
Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.					✓	
Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.	✓			✓	✓	✓
Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.						
Monitoring the use of antimicrobials and adherence to treatment regimens by patients.	✓				✓	✓
Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.					✓	✓
Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.	✓				✓	✓
Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.				✓		
Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.						✓
Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals, livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.						

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.	✓				✓	✓
Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.						✓

Appendix 2. AMR and AMS related actions that have been done in each region

Statements	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Acquiring antimicrobial medicines only from reliable sources to ensure their quality, safety and efficacy.		✓		✓		
Actively discouraging self-medication, storage for future use, and use of leftover antimicrobial medicines by the same or other patients.	✓	✓		✓		
Actively encouraging the appropriate use of antimicrobial medicines, wherever possible.		✓		✓	✓	
Actively being involved in water, sanitation and hygiene (WASH) and infection prevention and control (IPC) programmes in communities and health care settings, respectively.		✓		✓		
Actively participating in the World Antimicrobial Awareness Week campaign to promote the significant role of pharmacists as trusted sources of information for patients, healthcare professionals and the public on AMS.	✓	✓		✓	✓	
Appropriate counselling when dispensing antimicrobial medicines to support patient safety and improve health literacy.	✓	✓	✓	✓		
As part of the national professional pharmacy organisations, working with governments to ensure compliance by pharmacists with legislation applicable to the supply of antimicrobial medicines.				✓		✓
As per local regulations, recommend therapies other than antimicrobial medicines, including symptomatic treatment for viral or self-limiting conditions.	✓	✓		✓		
Conducting research on all facets of AMR and AMS and to apply the findings.				✓		
Educating other healthcare providers about AMR and encourage interprofessional cooperation within the AMS programmes in hospitals and in communities.				✓		
Encouraging and advocate an environmentally conscious approach and the application of the green pharmacy principles throughout the lifecycle of antibiotics.				✓		

Statements	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Encouraging competent authorities to involve pharmacists in national and local immunisation programmes and support immunisation generally, and especially for vulnerable populations, to help prevent infections, according to national regulations.		✓		✓		✓
Encouraging the implementation of AMS programmes at local, regional and national levels, where necessary.				✓		✓
Encouraging the use of point-of-care diagnostic tools to screen for early signs of infectious diseases, differentiate between viral and bacterial infections and inform the choice of empirical antimicrobials, where appropriate as part of clinical pathways.		✓				
Ensuring that antimicrobial medicines for animal use are supplied in accordance with country legislation and regulations.				✓		✓
Ensuring that antimicrobial medicines for human use are supplied subject to the prescription or order of a healthcare professional qualified and authorised to dispense these medicines in accordance with country legislation and regulations.	✓	✓	✓	✓		✓
Ensuring the right antimicrobial medicine is prescribed to the right person for the right duration at the right dose and dosing interval, opting for the narrowest spectrum agents, where possible.		✓		✓		
Monitoring and supporting patients who have been exposed to antimicrobial-resistant microorganisms.			✓	✓		✓
Monitoring the use of antimicrobials and adherence to treatment regimens by patients.			✓	✓		
Optimising antimicrobial therapy by advocating and actively participating in microbiology-informed antimicrobial therapy and diagnostic stewardship.		✓		✓		
Promoting evidence-based medicine in antimicrobial treatment that is informed by the current guidelines and by local antibiograms.		✓		✓		
Providing appropriate counselling and safety checks for allergies and chronic conditions as well as collaboratively work with other healthcare professionals documenting in healthcare records.		✓	✓	✓		✓
Providing information to the patient on the responsible use of antimicrobial medicines and to prescribers on rational and appropriate antimicrobial prescribing, antimicrobial consumption surveillance and the impact thereof.		✓		✓		
Providing updated information and implement health education campaigns on AMR, antimicrobial use and consumption, and AMS to prescribers as well as healthcare and veterinary professionals,		✓		✓		

Statements	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
livestock producers and other stakeholders in the food and agriculture sectors who administer or otherwise influence the use of antimicrobial medicines.						
Recognising and embracing pharmacists' leadership role in mitigating AMR and advancing AMS.		✓		✓		
Taking responsibility for programmes for the appropriate return and disposal of unused or expired antimicrobial medicines and proactively inform medicine users about the proper disposal of unused antimicrobial medicines.	✓	✓		✓		

Appendix 3. Common AMR and AMS actions for governments and policymakers in collaboration with member organisations in each region

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
Adapting and adopting the WHO Access, Watch, Reserve (AWaRe) categorisation and Antibiotic Book into the country's standard treatment guidelines and essential medicines list.						✓
Advocating international, collective and alternative financial models to incentivise the research and development of new antimicrobials and ensure equitable access to all antimicrobials for those in need.						
Collaborating with healthcare professionals and veterinary societies and associations to develop and facilitate the implementation of educational and behavioural interventions that will promote appropriate antimicrobial prescribing, raise awareness of AMR and support AMS in hospitals and the community.						
Conducting public health education campaigns that promote the responsible use of antimicrobial medicines and thereby support health literacy.				✓		
Demonstrating political will and commitment by mobilising relevant national ministries and departments to collaboratively improve the capacities of their national systems to address AMR in the "One Health" context.					✓	
Designing and implementing robust, representative national and international surveillance programmes for monitoring and reporting patterns of antimicrobial medicine use and resistance in humans, animals (livestock and companion), plants and the environment.			✓			
Developing and encouraging adoption of best practice guidelines and developing national systems and regulations to ensure appropriate prescribing,			✓	✓		✓

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
dispensing, compounding, and use of antimicrobial medicines in all sectors to limit the development of AMR.						
Developing and implementing a "return and disposal" programme for unused or expired antimicrobial medicines.	✓					
Developing and implementing AMS programmes for the responsible use and disposal of antimicrobial medicines in humans, animals, plants and the environment.			✓	✓		
Developing appropriate adult, child and (livestock and companion) animal immunisation programmes for diseases that are vaccine-preventable.		✓	✓			
Developing, funding, implementing, monitoring and evaluating national action plans to contain AMR and formally involving all key stakeholders, including healthcare professionals, the private sector, academia and civil society.					✓	
Enforcing regulations preventing the dispensing and sale or supply of antimicrobial medicines without the prescription or order of an authorised prescriber based on the local regulations.				✓		✓
Ensuring availability and access to relevant education on antimicrobial use for the whole of society.					✓	
Ensuring that all antimicrobials listed in WHO Essential Medicines Lists are always available in sufficient quantity and standard quality.		✓	✓		✓	✓
Ensuring that essential antimicrobials will be maintained on the market with contingency stock level arrangements and alternative production by pharmacists enabled where necessary.						
Ensuring that only authorised channels are used for the procurement and distribution of medicines to minimise the availability of substandard or falsified medicines, implementing, where possible, pharmaceutical track-and-trace systems.	✓		✓	✓		✓
Establishing infection prevention and control (IPC), and water, sanitation and hygiene (WASH) programmes for effective prevention and containment of infections and ensuring that all communities and healthcare facilities have access to such programmes.				✓	✓	✓
Facilitating the registration of new or existing antimicrobials and providing appropriate economic incentives to encourage their development and commercial availability.	✓					
Facilitating the registration of new or existing antimicrobials across countries and appropriate economic incentives for transferring technology to other						

Priorities	African	Americas	Eastern Mediterranean	European	South East Asia	Western Pacific
manufacturers to encourage their development and commercial availability.						
Including AMS in pre- and in-service education and training and promote interprofessional learning and collaboration.			✓			
Promoting the adaptability of antimicrobial (including fixed dose combinations) pack sizes according to their course length and advocate against irrational fixed dose combinations.						✓
Promoting the inclusion of the concept of AMR, its impact, and measures to reduce its possible emergence and spread in basic education curricula.		✓	✓			
Regulating and monitoring the rational and appropriate consumption of antimicrobials, routes of access and data availability in humans and animals, plants and the environment.						
Strengthening and enforcing legislative and regulatory controls applicable to all sectors in relation to the life cycle of antimicrobial medicines, in particular, authorisations to market, promote, import, export, prescribe, dispense, correctly store, dispose and otherwise supply antimicrobial medicines including via protocols, internet or telecommunications (telemedicine).			✓			
Supporting the adoption of effective antimicrobial medicines disposal and biosecurity practices to prevent the contamination of soil and water sources with antimicrobial residues and antimicrobial-resistant microorganisms and ensure that all industries and farms have access to such programmes.						
Supporting the development and implementation of biosecurity and animal husbandry measures to encourage the discontinuation of the use of antimicrobial medicines for growth promotion, prophylaxis and metaphylaxis.						
Supporting the discovery and development of new cost-effective antimicrobial medicines, alternatives to antimicrobials, and research into improved use of existing antimicrobials, including new combinations.						

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