

DRAFT

**Framework for Accelerating Action
to Fight Antimicrobial Resistance
in the Western Pacific Region**

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Abbreviations

AMR	antimicrobial resistance
DDD	defined daily doses
FAO	Food and Agriculture Organization of the United Nations
MDR-TB	multidrug-resistant TB
MRSA	methicillin-resistant <i>Staphylococcus aureus</i>
NCD	noncommunicable disease
OIE	World Organisation for Animal Health
R&D	research and development
SDG	Sustainable Development Goal
TB	tuberculosis
UHC	universal health coverage
WHO	World Health Organization

Executive summary

In 2014, the Regional Committee for the Western Pacific endorsed the *Action Agenda for Antimicrobial Resistance in the Western Pacific Region*, focusing on the development of national action plans, increasing awareness in other sectors, and strengthening health systems and surveillance. Progress has been made, but it has been uneven across countries in the Western Pacific Region. Many countries still face enormous challenges in tackling the multiple dimensions and systemic issues of antimicrobial resistance (AMR) and its drivers, particularly in an environment of competing priorities and needs.

AMR is an ever-present threat to the achievement of universal health coverage (UHC), the Sustainable Development Goals (SDGs) and the security of populations. The complexity of the problem lies in its inherent nature and the characteristics and extent of its impact on health and development.

AMR is a natural process accelerated by human activity and practices, such as the overuse and misuse of antimicrobials, the spread and transmission of resistance and infections, and the contamination of the environment. Everyone is at risk of being affected by AMR. Everyone also contributes directly or indirectly to its development and emergence.

The already-serious impact of AMR is the result of past human activities and practices and the shortfall of sustained, grounded, future-oriented and broad societal action. This will become more pronounced as countries in the Region face multiple and complex challenges related to rising noncommunicable diseases (NCDs), ageing populations, health emergencies and the impact of climate change. Countries are unevenly placed in terms of capacity and resources to address AMR and these other competing challenges at the same time.

In 2018, a new vision, *For the Future: Towards the Healthiest and Safest Region*, was developed in consultation with Member States, partners and other stakeholders to guide the work of the World Health Organization in the Western Pacific Region in the coming years. The vision prioritized health security, including AMR, and proposed a set of operational shifts to help countries address the complex issues relating to health and development.

This *Framework for Accelerating Action to Fight Antimicrobial Resistance in the Western Pacific Region* considers these operational shifts as new ways of working in the Region to slow the spread of AMR and avert its impact. The Framework will guide countries to implement sustained and future-oriented solution with actions contextualized to their needs and situations through broad societal participation and movements. Specifically, the Framework will guide countries: (i) to strengthen systems as foundation for sustainable actions; (ii) to work beyond health; (iii) to take actions today, guided by their vision of the future; and (iv) to build solutions from the ground up, while ensuring country impact.

The operational shifts include:

a. Working backwards from a longer-term goal (“backcasting”)

AMR will continue to evolve over time and, therefore, needs to be approached with the future in mind. Envisioning the future and working backwards to identify what needs to be done now and the

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subsequent strategies and steps to attain that future enables countries to plan for the long term to address complex problems such as AMR. Good country examples exist, such as the ban on using antibiotics as growth promoters in agriculture in Europe and the recent reversal of the registration of fluoroquinolones in the veterinary sectors by the Food and Drug Administration in the United States of America. These steps are part of long-term plans to combat overuse and misuse of antibiotics to slow the progression of AMR.

b. Championing health beyond the health sector

AMR affects everybody. The 2015 *Global Action Plan on Antimicrobial Resistance* recognized that AMR will affect everybody and, thus, requires whole-of-society engagement. Every sector, according to their respective mandates, resources and influence, must work to promote best practices and strengthen systems to control and monitor the drivers of AMR. As such, AMR can only be addressed through a multisectoral and multi-stakeholder approach involving many different disciplines. In addition, this Framework advances the idea of a movement to fight AMR as an overarching principle to mobilize mass action, underpinned by value formation – of protecting self, society and future generations. The aim is to recast AMR as a political and social issue and ingrain collective behaviour change through incremental, yet sustained, awareness-raising and adoption of good practices in order to reach a level whereby acting responsibly to combat AMR will become a societal norm and a way of life.

c. Systems approach: leveraging existing systems

AMR is an ever-present threat to health security and the achievement of UHC and the SDGs. The interventions for AMR in this context will need approaches that are sustainable and efficient. Interventions need to be a part of or designed into broader systems for UHC (in the health sector) and for the SDGs (beyond the health sector). Utilizing existing systems will drive both sustainability and efficiency and will help resource-constrained countries to address AMR within their current resources and without competing with other urgent priorities, such as NCDs and climate change. Sustainable interventions will, in principle, be anchored to existing mechanisms, systems or structures that are part and parcel of governance, disease control or public protection and safety.

d. Building solutions from the ground up and driving country impact

AMR affects different countries differently, and its impact is underpinned by factors relating to local cultures, ways of life, stages of development and the capacity of national health systems. Developing solutions to address AMR should, therefore, take into consideration local contexts and use existing country systems, which can be strengthened over time. This would entail generating local intelligence as a basis for designing interventions that target specific needs and situations on the ground (for example, reducing AMR-related morbidity and mortality by networking service providers in areas with limited capacity or targeting vaccinations for hard-to-reach populations). Local intelligence can also spur innovation and scale up good practices to combat AMR. This operational shift will focus on strengthening systems and processes in countries, as well as local intelligence to guide policy and decision-making and the formulation of regional and global strategies and interventions.

1. Background

The global threat of AMR

Antimicrobial resistance (AMR) is an ever-present threat to the security of our future and the achievement of universal health coverage (UHC) and the Sustainable Development Goals (SDGs). If actions are not taken today, AMR will cause economic losses of up to 3.8% of the global gross domestic product per year by 2030. If unabated, it will also cause 10 million deaths per year by 2050, of which 4.5 million will occur in the Asia Pacific region.

AMR is outpacing global efforts to contain it, as new resistant mechanisms emerge and spread globally. Recently, the World Health Organization (WHO) raised a global warning that resistance to carbapenem, a class of antibiotic agents, is now one of the most significant threats to public health. AMR threatens to reverse the gains achieved in public health programmes, including tuberculosis (TB), malaria, HIV/AIDS and sexually transmitted infections. Approximately 558 000 people had developed TB resistant to rifampicin by 2017, of which 82% of cases were multidrug-resistant TB (MDR-TB). Treatment for drug-resistant TB is longer and requires more expensive and more toxic drugs. The world is facing the threat of a pandemic of extensively drug-resistant *Neisseria gonorrhoeae*, with serious public health consequences. Meanwhile, resistance to antimalarial drugs has been observed in the Greater Mekong Subregion, where partial resistance to artemisinin and other antimalarial drugs has emerged independently in multiple areas over the past decade.

AMR hits the poor and vulnerable the hardest. In the event of resistance, poor populations are least able to afford effective antibiotics. The World Bank estimates that AMR could push 28 million more people into extreme poverty by 2050, compared to 2017. Recent reports also indicate that the probability of developing a resistant infection is significantly higher for children up to 12 months of age and among adults 70 years of age and older. AMR surveillance in Japan, for example, showed that 80% of the cases with carbapenem resistance are people 65 years of age and older.

The world is running out of effective antibiotics

A 2017 review by WHO on the research and development (R&D) of antimicrobials has shown that the pipeline for antibiotic development is still insufficient to mitigate the threat of AMR. More investment is needed for antibiotics, especially for *Mycobacterium tuberculosis* and the critical priority Gram-negative carbapenem-resistant pathogens.

Gram-negative bacterial infections are considered the most critical priority for antibiotic research and development, as strains that cannot be treated with any of the antibiotics currently on the market are emerging worldwide. While there were about 59 antibiotics (including combinations) and 11 biologicals in the clinical pipeline in 2017, there continues to be a lack of potential treatment options for priority resistant bacteria, especially for multidrug- and extensively drug-resistant Gram-negative pathogens.

R&D for treatment against drug-resistant TB is also receiving less attention. Only seven new agents for TB are currently in clinical trials. This is especially problematic as treatment of TB infections requires a combination of at least three antibiotics, and novel treatment regimens are desperately needed.

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This situation will worsen with the continuing overuse and misuse of antibiotics in the human and animal sector. A 2018 report by the World Organisation for Animal Health (OIE) on consumption of antibiotics in animals shows that the OIE Region of Asia, Far East and Oceania – which includes countries and areas in the WHO Western Pacific Region – has the highest proportion of countries using antimicrobial growth promoters.

Situation in the Western Pacific Region

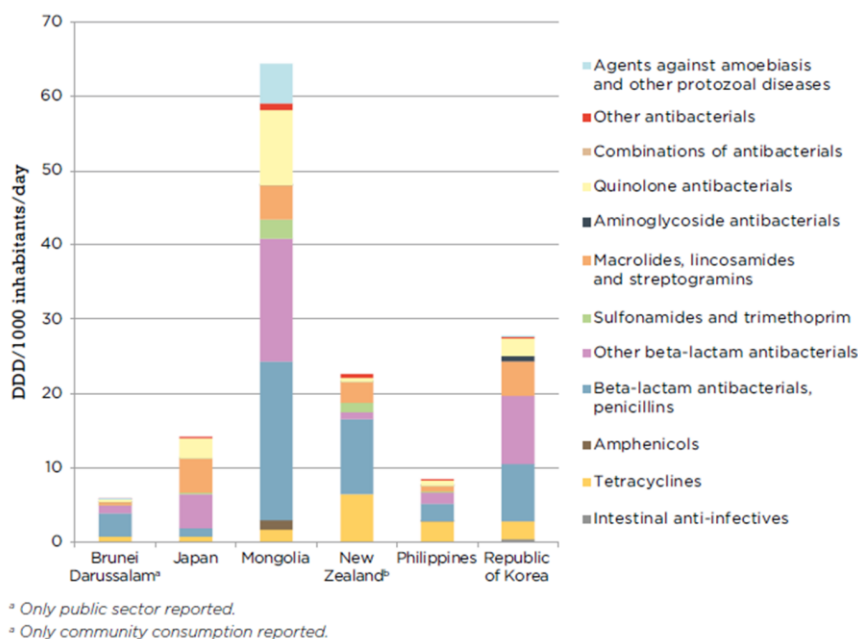
Regional estimates from 2017 show that AMR will cause estimated losses of between US\$ 9.5 billion and US\$ 125.6 billion in the Western Pacific Region between 2015 and 2025. The cost of AMR in China alone during the period is estimated to be between US\$ 6.3 billion and US\$ 83.0 billion.

The Region's targets to eliminate high-risk infectious diseases are threatened by AMR. Drug-resistant TB occurs in about 5.3% of newly treated cases and 25% in previously treated cases. Four countries in the Region (China, Papua New Guinea, the Philippines and Viet Nam) are among the top 30 countries with high rates of MDR-TB. Resistance to antimalarial drugs (to artemisinin and to both artemisinin and partner drugs) has been observed in the Greater Mekong Subregion, causing high treatment failure rates.

Infections that are resistant to last-resort antibiotics such as carbapenem-resistant Enterobacteriaceae and methicillin-resistant *Staphylococcus aureus* (MRSA) have been reported in many countries and areas in the Region, including Australia, China, Hong Kong SAR (China), Japan, Malaysia, New Zealand, the Philippines, Singapore and Viet Nam. These infections cause high mortality and, in most cases, prolonged hospital stays and increased health-care costs.

The overuse and misuse of antibiotics continues to be a serious problem, with around 50% of antibiotic consumption considered inappropriate or irrational. Data on antibiotic consumption have officially been reported to WHO for six countries of the Western Pacific Region: Brunei Darussalam, Japan, Mongolia, New Zealand, the Philippines and the Republic of Korea. Total consumption varied from 5.9 defined daily doses (DDD) per 1000 inhabitants per day in Brunei Darussalam to 64.4 DDD per 1000 inhabitants per day in Mongolia (Fig. 1), the highest consumption rate among all the countries reporting to WHO at the global level in 2018.

Fig. 1. Consumption of antibiotics (DDD per 1000 inhabitants per day) by pharmacological subgroups in six countries in the Western Pacific Region, 2018



Source: WHO report on surveillance of antimicrobial consumption: 2016–2018 early implementation. Geneva: World Health Organization; 2018

Progress of AMR work in countries of the Western Pacific Region

In 2014, the Regional Committee for the Western Pacific endorsed the [Action Agenda for Antimicrobial Resistance in the Western Pacific Region \(WPR/RC65.R4\)](#). In 2015, the World Health Assembly endorsed the [Global Action Plan on Antimicrobial Resistance](#). Both have helped guide the development and implementation of national AMR action plans in countries in the Western Pacific Region.

The work on AMR has progressed at varying speeds in countries in the Region over the past two decades. The regional Action Agenda provided guidance for priority actions, including strengthening development and implementation of national plans and raising awareness in multiple sectors, improving surveillance of AMR and monitoring of antimicrobial use, and strengthening health system capacity to contain AMR. The approval of the Global Action Plan a year later triggered even more commitment and action globally and in the Region.

By the end of 2019, a total of 17 countries and areas in the Region will have adopted national AMR action plans, including: Australia, Cambodia, China, Cook Islands, Fiji, Hong Kong SAR (China), Japan, the Lao People's Democratic Republic, Malaysia, Mongolia, New Zealand, Papua New Guinea, the Philippines, the Republic of Korea, Singapore and Viet Nam. The rest of the Pacific island countries have developed national action plans at various stages, although a number of these are yet to be officially issued.

Between 2018 and 2019, countries established and strengthened their national systems, including surveillance of AMR and antimicrobial consumption, as well as stewardship programmes. A

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substantial number of countries have established AMR surveillance systems, including Australia, Japan, Malaysia, New Zealand, the Philippines, the Republic of Korea and Singapore. WHO has provided support to establish and strengthen national surveillance systems in Cambodia, the Lao People's Democratic Republic and the Philippines. Two countries, Japan and the Philippines, have contributed surveillance data to the Global Antimicrobial Resistance Surveillance System.

The Organization has provided training on the WHO methodology for monitoring antimicrobial consumption to several countries, namely Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, Mongolia, the Philippines and Viet Nam. Seven countries – Australia, Brunei Darussalam, Japan, Mongolia, New Zealand, the Philippines and the Republic of Korea – have submitted data for the global monitoring of antimicrobial consumption.

A number of countries and areas, including Australia, Brunei Darussalam, Hong Kong (SAR), Japan, Malaysia, Mongolia, the Philippines, Singapore and Viet Nam, have established antimicrobial stewardship programmes.

WHO, the Food and Agriculture Organization of the United Nations (FAO) and OIE support countries during the annual World Antibiotic Awareness Week to increase awareness of AMR.

Towards a new framework to accelerate action to fight AMR

The *Action Agenda for Antimicrobial Resistance in the Western Pacific Region* was published in 2014, aimed at supporting countries to contain AMR through: (i) strengthening development and implementation of comprehensive national plans to contain AMR and raise awareness in multiple sectors; (ii) improving AMR surveillance and monitoring of antimicrobial consumption; and (iii) strengthening the capacity of health systems to combat AMR. These priority areas will continue to be strengthened as core capacities for countries to combat AMR.

By 2016, the SDGs, along with UHC, had provided a new platform for the regional Action Agenda in the context of broader health and development. UHC offers an opportunity for the broader strengthening of health systems, while the SDGs are a channel for countries to tackle AMR using a development lens and multisectoral approach.

However, these actions are not enough. The world is rapidly losing effective antibiotics to treat highly resistant infections. This is happening in the context in countries of continuing challenges of fragile health systems, lack of resources and competing priorities. Member States in the Region need to work urgently to control the continuing overuse and misuse of antimicrobials, while strengthening engagement with other sectors and stakeholders to address the other complex factors contributing to AMR.

This new *Framework for Accelerating Action to Fight Antimicrobial Resistance in the Western Pacific Region* will guide the Member States to accelerate the implementation of the 2014 regional Action Agenda and their national action plans. It will supplement the strategies and actions in existing plans while presenting new ways of working that will enable sustained, long-term and future-oriented action to fight AMR. The development of the new Framework is timely given the new vision for WHO's work in the Region and the renewed global and regional commitment to combat AMR towards the achievement of UHC and the SDGs.

2. The new Framework

A vision for the Region

The new vision for the Western Pacific Region, *For the Future: Towards the Healthiest and Safest Region*, places health security, including AMR, as one of the priorities for WHO in the coming years. The other areas of priority – noncommunicable diseases (NCDs) and ageing; climate change, the environment and health; and “reaching the unreached”, that is, all people and communities still afflicted by infectious diseases and high rates of maternal and infant mortality – all bear on or will be affected by AMR.

The vision also recognizes that these priorities, including AMR, are not new issues. However, they require new thinking and new ways of working, including a set of the operational shifts: finding new approaches to meet future challenges (innovation); working backwards from a longer-term goal (backcasting); taking a systems approach, with UHC as the foundation; building solutions from the ground up (grounds up); driving and measuring country impact; championing health beyond the health sector; and strategic communications as a means to deliver on new ways of working.

The implementation of the 2014 regional Action Agenda and the goal to accelerate action to fight AMR can be facilitated by these operational shifts. This new Framework will focus on how countries can adopt these operational shifts and new ways of working.

Objectives of the Framework

This Framework provides guidance for countries in the Region to accelerate action to fight AMR. Specifically, it aims to guide Member States:

- 1) to accelerate the implementation of the 2014 regional Action Agenda and national action plans on AMR through a set of operational shifts and new ways of working;
- 2) to catalyse the opportunities provided by global and regional movements to support Member States to accelerate action to fight AMR; and
- 3) to strengthen existing regional mechanisms.

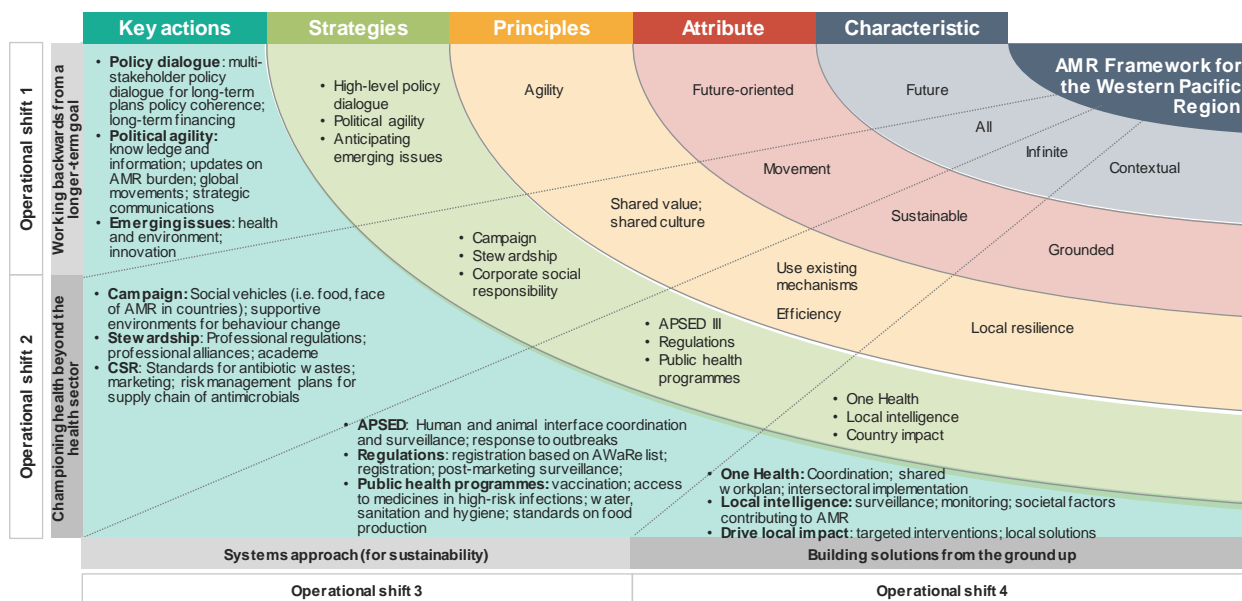
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3. New ways of working: operational shifts to combat AMR

The complex nature of AMR and its interlinkages to health and development processes present enormous challenges to countries in the Western Pacific Region, especially in the face of competing needs and priorities such as addressing NCDs, disease outbreaks and the impact of climate change. Tackling AMR in the midst of these issues has challenged the resources and capacities in countries, including implementation of the 2014 regional Action Agenda and national AMR action plans. New ways of working or operational shifts are required to address these constraints.

The operational shifts to combat AMR in the Region (Fig. 2) were designed to guide countries to adopt and implement sustained, future-oriented and long-term action. These operational shifts in both how WHO supports countries and how countries address health challenges will accelerate action to fight AMR and drive impact in countries. The operational shifts, strategies and key actions are further discussed in the subsequent paragraphs of this section.

Fig. 2. Summary of operational shifts to combat AMR in the Western Pacific Region



APSED III = Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies; CSR = corporate social responsibility

Operational shift 1. Future oriented: working backwards from a longer-term goal

AMR will continue to evolve over time and, therefore, must be approached with the future in mind.

The impact of AMR that the world sees today is the result of the evolution of resistance accelerated by human activities in the distant and immediate past. Upon his discovery of penicillin in 1928, Alexander Fleming envisioned and warned of antibiotic resistance. There was global acknowledgment of the impact of resistance, but until recently there was no systematic plan to avert AMR. This has resulted in a collective shortfall of sustained, long-term and future-oriented action, leaving the world unprepared to combat AMR.

Envisioning the future and working backwards to identify what needs to be done now, as well as the subsequent strategies and steps to attain that future, enables countries to plan for the long term in addressing complex problems such as AMR. There are good country examples of action, such as the ban on using antibiotics as growth promoters in agriculture in Europe and the recent reversal of the registration of fluoroquinolones in the veterinary sectors by the Food and Drug Administration in the United States of America. These steps are part of long-term plans to combat overuse and misuse of antibiotics to slow the progression of AMR.

Operational shift 2. Championing health beyond the health sector: a movement to fight AMR

AMR affects everybody. The 2015 *Global Action Plan on Antimicrobial Resistance* recognized that AMR will affect everybody and, thus, requires whole-of-society engagement. Every sector, according to their respective mandates, resources and influence, must work to promote best practices and strengthen systems to control and monitor the drivers of AMR.

As such, AMR can only be addressed through a multisectoral and multi-stakeholder approach involving many different disciplines. In addition, this Framework advances the idea of a movement to fight AMR as an overarching principle to mobilize mass action, underpinned by value formation – the value of protecting self, society and future generations. This movement will shift short-term interests, including incentives and profit, towards future-oriented action to fight AMR. The aim is to recast AMR as a political and social issue and ingrain collective behaviour change through incremental, yet sustained, awareness-raising and the adoption of good practices in order to reach a level whereby acting responsibly to combat AMR will become a societal norm and a way of life.

Operational shift 3. Systems approach: leveraging existing systems

AMR is an ever-present threat to health security and the achievement of UHC and the SDGs. The interventions for AMR in the context of these goals require approaches that are sustainable and efficient. Interventions need to be a part of or designed into broader systems for UHC (in the health sector) and for the SDGs (beyond the health sector).

Utilizing existing systems will drive both sustainability and efficiency and will help resource-constrained countries address AMR with their current resources and without the need for competing with other urgent priorities, such as NCDs and climate change. Sustainable interventions will, in principle, be anchored to existing mechanisms, systems or structures that are a part and parcel of governance, disease control or public protection and safety.

Operational shift 4. Building solutions from the ground up and driving country impact

AMR affects countries differently, and its impact is underpinned by factors relating to local cultures, ways of life, stages of development and the capacity of national health systems.

Developing solutions to address AMR should, therefore, take into consideration local contexts and use existing country systems that can be strengthened over time. This would entail generating local intelligence as a basis for designing interventions that target specific needs and situations on the ground, such as reducing AMR-related morbidity and mortality by networking service providers in

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areas with limited capacity or targeting vaccinations for hard-to-reach populations. Local intelligence can also spur innovation and scale-up of good practices to combat AMR.

This operational shift will focus on strengthening systems and processes in countries, as well as local intelligence, to guide policy and decision-making and the formulation regional and global strategies and interventions.

Proposed strategies and actions to implement operational shifts

Operational shift 1. Future-oriented: Working backwards from a longer-term goal

High-level political dialogue	Political agility	Anticipating emerging issues
<ul style="list-style-type: none"> Multi-stakeholder policy dialogue to integrate AMR actions into long-term national development goals Advance policy coherence across sectors to ensure alignment of policy mandates Advocate sustainable resources such as inclusion into general appropriations to support financing of AMR actions 	<ul style="list-style-type: none"> Address knowledge and information gaps to improve decision-making Regularly update politicians of situations regarding the AMR burden Participate in global movements Strengthen capacity for strategic communications, where appropriate, to drive long-term political decisions on AMR 	<ul style="list-style-type: none"> Generate awareness and strengthen current regulations and standards to prevent contamination of the environment Use existing mechanisms to facilitate the adoption and diffusion of new technologies for diagnosis, surveillance and treatment (innovation)

Notes:

1. *Political agility* in the context of this Framework means the ability of political leaders and decision-makers to use available information for timely action to address the impact of AMR. One bottleneck to swift action is engaging leadership and approval at various political levels. This process can be accelerated by supporting proposed actions with robust evidence to get ahead of the so-called AMR curve, depicting the rapid progression and increase of AMR.
2. The *environment* is becoming an area of concern due to contamination through antibiotic residues, antimicrobial resistance genes and antimicrobial-resistant microorganisms from pharmaceutical, hospital and municipal waste. The environment serves as the vehicle for transmission of infection across the human and animal interface.
3. *Existing mechanisms for adoption and diffusion of technologies* may include marketing authorization or registration and health technology assessment.

Operational shift 2. Championing health beyond the health sector: a movement to fight AMR

Campaigns for behaviour change	Stewardship	Corporate social responsibility and the private sector
<ul style="list-style-type: none"> • Increase awareness in communities • Identify areas as platforms for campaigns • Establish a supportive environment for behaviour change: well-trained professionals and community-based experts or communities of practice 	<ul style="list-style-type: none"> • Implement national intersectoral antimicrobial stewardship • Use national licensing and accreditation programmes to require, monitor and audit facility-based antimicrobial stewardship programmes • Incorporate competency-based programmes into education and training of health professionals • Supervise prescribers and dispensers in the community 	<ul style="list-style-type: none"> • Work with regional and national industry and private sector alliances to improve transparency on monitoring and enforcement of ethical codes for marketing • Develop risk management plans to track antibiotics in the supply chain • Enforce standards on antibiotic residues for pharmaceutical and hospital waste

Notes:

1. Antimicrobial *stewardship* involves a multidisciplinary approach to implementing strategies to improve the appropriate and safe use of antimicrobials by health service organizations and professionals. Stewardship can be addressed at different levels: at the national level to cover the registration, distribution and sale of antimicrobials; in health-care settings; among health professionals; and at the community level.
2. A *national intersectoral antimicrobial stewardship* entails an agreed monitoring plan of antibiotic use in human, animal and agriculture sectors and monitoring of antibiotic residues in the food chain and the environment. The results of that monitoring shall be reported to national intersectoral committees to guide regulatory enforcement and development of policies and interventions.
3. The *risk management plan* for pharmaceutical distribution and supply will trace antimicrobials in the distribution and supply chain and will help ensure that: (i) critical antibiotics for human use are not distributed in the agriculture and veterinary sectors; and (ii) antibiotics are distributed and supplied in strict compliance with national regulations. The risk management plan may be administered by national regulatory authorities and reported to the national multisectoral committees on AMR.

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Operational shift 3. Systems approach: leveraging existing systems

APSED III	Regulations	Public health programmes
<ul style="list-style-type: none"> • Incorporate AMR in the development of plans and systems for public health emergency preparedness • Incorporate AMR outbreaks in public health event monitoring, communications and verification, including event-based surveillance for critical AMR • Utilize the Field Epidemiology Training Programme to develop capacity for AMR surveillance in countries 	<ul style="list-style-type: none"> • Optimize regulations to facilitate registration of antibiotics using AWaRe classification • Establish separate registration systems for human and veterinary medicines, including restriction of registration and use of critical antimicrobials for human medicines in the veterinary and agriculture sectors • Strengthen regulations on production and post-marketing surveillance to eliminate substandard and falsified antimicrobials from the market • Consider labelling of all antimicrobial products: “ANTIBIOTICS drive antimicrobial resistance. Use only when advised by health professionals” 	<ul style="list-style-type: none"> • Strengthen vaccination programmes and ensure coverage of unreached populations • Strengthen delivery of public health programmes such as TB, malaria HIV/AIDS and other high-risk infections • Ensure access to water, sanitation and hygiene in all health facilities and in the community • Implement and monitor good hygiene practices and international norms and standards in food production such as Hazard Analysis and Critical Control Point (HACCP) in food production

Notes:

1. The *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies* (APSED III) is the regional framework for countries to address shared threats. Started in 2005, APSED III focuses on building minimum capacities for dealing with outbreaks and public health emergencies and has evolved to contextualize new approaches, including strengthening health systems and capacities. Its implementation is now well embedded in country systems owing to its country-focused approach. Further, APSED III provides a platform for stakeholder engagement.
2. *Access, Watch, and Reserve* (AWaRe) is a new classification of antibiotics issued by WHO in 2017 to guide the appropriate use of antibiotics. The *Access* group includes the first- or second-choice antibiotics used for common infections and may be made widely available, affordable and quality assured. The *Watch* group includes antibiotic classes that have higher resistance potential and so are recommended as first- or second-choice treatments only for a specific, limited number of indications. These should be prioritized as key targets of stewardship programmes and monitoring. The *Reserve* group includes antibiotics that should be treated as last-resort options that should be accessible, but whose use should be tailored to highly specific patients and settings, when all alternatives have failed (for example serious, life-threatening infections due to multidrug-resistant

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bacteria). These should be protected and prioritized as key targets of national and international stewardship programmes.

3. *Vaccines* can help limit the spread of antibiotic resistance. Vaccinations are effective for prevention of infections for humans and animals and consequently reduce the use of antibiotics and the development of resistance. They are also cost-effective. For example, if every child in the world were to be vaccinated against *Streptococcus pneumoniae* bacteria, which can cause pneumonia, meningitis and middle ear infections, an estimated 11 million days of antibiotic use each year would be avoided.

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Operational shift 4. Building solutions from the ground up and driving country impact

One Health	Local intelligence	Drive local impact
<ul style="list-style-type: none"> • Advance the One Health approach and principle as a platform for multisectoral collaboration and governance of AMR actions • Develop a shared workplan with accountabilities for each sector and share information on progress • Support joint intersectoral implementation and monitoring of national AMR action plans 	<ul style="list-style-type: none"> • Strengthen AMR surveillance systems based on country context and capacity • Strengthen or develop laboratory capacity to include a network of laboratories to assist diagnosis and surveillance of infections • Conduct and support epidemiological studies to identify key drivers of the emergence and spread of AMR in various populations • Undertake antimicrobial consumption monitoring in all sectors 	<ul style="list-style-type: none"> • Generate local evidence on factors that influence the use of antimicrobials and access to essential health services, especially in hard-to-reach areas as a basis for targeted actions <ul style="list-style-type: none"> ➤ Reward the innovation of local practices and solutions ➤ Use communities of practitioners in different disciplines as local technical experts in key areas ➤ Mobilize local and national support for testing and scaling up innovative solutions to combat AMR

Notes:

1. The *One Health* approach as it applies to AMR seeks to address health issues at the human–animal–environment interface with collaboration across all sectors and disciplines responsible for health in an effort to address zoonotic diseases and other shared health threats. The One Health approach is needed as antimicrobials used to treat various infectious diseases in animals may be the same or be similar to those used in humans. Resistant bacteria arising either in humans, animals or the environment may spread from one to the other, and from one country to another.
2. *AMR surveillance* is the cornerstone for assessing the burden of AMR. It permits the early detection of resistant strains of public health importance and supports the prompt notification and investigation of outbreaks. It also provides information on the key drivers and factors that contribute to resistance, resulting in timely action to address these drivers. Surveillance further facilitates evidence-based decisions for clinical treatment and management, thus contributing to better outcomes at the individual and systems level.
3. *Surveillance of antimicrobial consumption and use* tracks how and why antimicrobials are being used by patients and health-care providers. Monitoring antimicrobial prescription and consumption behaviour provides insights and tools needed to inform therapy decisions, to assess the public health consequences of antimicrobial misuse and to evaluate the impact of resistance containment interventions. WHO has established the Western Pacific Region Antimicrobial Consumption Surveillance System, consisting of web-based reporting and a software application for community-based monitoring. The system is expected to be rolled out in early 2020.

4. Enhancing regional mechanisms to support the fight against AMR

WHO in the Western Pacific Region works with partners, scientific bodies and experts to generate evidence; develop norms, standards and guidelines; and strengthen technical support for countries. WHO will strengthen these partnerships and mechanisms to support Member States to accelerate action to fight AMR under this new Framework.

The AMR Tripartite

The Tripartite is a longstanding partnership between the WHO, FAO and OIE to take collective action against challenges to public health, animal health and the environment, including the emergence and spread of AMR. In the Region, the Tripartite works in the areas of emerging and endemic zoonotic diseases including foodborne diseases, information sharing and strengthening of health systems, awareness and behaviour change, surveillance and monitoring of antimicrobial resistance and use, and joint support to countries to implement national action plans.

WHO's engagement within the Tripartite and with other United Nations agencies will continue to be strengthened along the lines of the operational shifts, especially focusing on strengthening multisectoral engagement and taking a One Health approach in countries.

WHO mechanisms: WHO collaborating centres and technical advisory groups and scientific bodies

WHO engages institutions and scientific bodies to support its work across a broad range of areas, including research and the generation of evidence; development of norms, standards and guidelines; and support to countries to address health challenges and strengthen health systems.

The Organization has designated institutions globally as WHO collaborating centres to carry out its activities and programmes. There are currently 175 WHO collaborating centres in the Region working with WHO in areas such as nursing, occupational health, communicable diseases, nutrition, mental health, chronic diseases and health technologies.

WHO also regularly convenes groups of technical experts to seek specific and time-limited advice on certain programmes, as well as broad and ongoing advice. The technical advisory groups are based on the principles of adequate international and technical distribution of expertise, and the global representation of different trends of thought, approaches and practical experience, as well as interdisciplinary balance.

WHO will catalyse the utilization of these mechanisms to support the implementation of this Framework in countries across a broad range of areas, including strengthening surveillance, infection prevention and control, response to AMR outbreaks, campaigns and strategic communications to influence policy and behaviour, and broader strengthening of systems.

Western Pacific AMR consortium

WHO proposes the establishment of a Western Pacific Regional AMR consortium for innovation, research and capacity-building. This consortium will drive generation of evidence across the Region

Annex

and facilitate the innovation of practices, as well as the adoption and diffusion of new technologies in countries. The consortium will be a platform for:

- 1) initiation and development of local innovation (including practices and processes) to address the deep-seated issues (such as behaviour change) and complex dimensions of AMR (surveillance, diagnosis, treatment, infection prevention and control, among others);
- 2) additional generation and provision of scientific evidence and high-quality data to guide decision-making processes and the development of interventions in countries; and
- 3) collaboration for the development of long-term projects, programmes and reforms that will require intense and sustained cooperation of different sectors and disciplines, such as setting new models for pharmaceutical trade and access to medicines as well as regulation of antibiotics and for formulating standards for the management of pharmaceutical, hospital and household wastes in the context of AMR.