

Developing a situation analysis tool to assess containment of antimicrobial resistance in South East Asia

Manish Kakkar and colleagues discuss the development of a tool to assess how programmes tackling antimicrobial resistance in South East Asia are faring

Antimicrobial resistance (AMR) is no longer defined by national or political boundaries. Isolates of *Escherichia coli* bearing *mcr-1* were first identified in China, but shortly after were found in clinical and animal samples in the US.^{1,2} The World Health Organization and its partners have warned of the global rise of resistance against antibiotics, particularly those of “last resort.”³

Evidence shows that the main drivers of AMR are antibiotic selection pressure and transmission of resistant microbes.³ But drivers at the level of policies and systems also contribute.¹⁶ This complexity calls for a comprehensive, holistic, collaborative approach. The 68th World Health Assembly in 2015 adopted the global action plan on AMR (GAP-AMR, box 1), which was expected to translate into national action plans by May 2017.⁴ National action plans should include a strategic action plan, based on a “One Health” approach, bringing together multiple sectors to combat resistance in the local context. The One Health approach provides opportunities to integrate multiple disciplines, working locally, nationally, regionally, and globally to tackle the drivers of AMR emergence.

To assist member states, WHO, the Food and Agriculture Organization of the United Nations, and the World Organisation for

Animal Health have developed a manual and sample templates, as well as a library of existing national action plans.⁵ The manual recommends performing a situation analysis before developing a national action plan. Countries differ widely in their capacity to develop a comprehensive, holistic national action plan. Of 133 countries surveyed in the worldwide situation analysis conducted by WHO, very few reported to have a comprehensive, multisectoral national action plan for containment of AMR supported by sustainable financing.⁴ Conducting a comprehensive situation analysis is essential for tailoring a national action plan to the setting of a particular member state, which would inform the subsequent steps of the process.

SEARO tool for situation analysis

The WHO South East Asia Regional Office (SEARO) developed a tool to conduct a system-wide analysis of AMR containment programmes. We developed indicators based on existing evidence to evaluate the progress made in each member state of the region over five years (2016-20). The tool was developed to identify vulnerabilities in the system, to identify the stage of implementation of GAP-AMR related activities, and to assess the progress made over time.

The situation analysis tool is being piloted in several countries. Here we present the tool and discuss its potential in identifying gaps in implementing the GAP-AMR, its shortcomings, and its relevance in comparison to other available tools. This will be instrumental for WHO

to fulfil its obligations, in accordance with the resolution of the 68th World Health Assembly to report on the development, implementation, monitoring, and evaluation of the national action plans for the containment of AMR developed by member states.⁶

Developing the tool

The tool was based on a scoping literature review. We systematically searched for major frameworks for monitoring AMR in different countries. In the first stage, we searched PubMed for published, peer reviewed documents; in the second stage, we identified AMR containment programmes that had been operational and searched their websites for related documents. Finally, in the third stage, we manually searched through the bibliographies of the included documents to identify other relevant documents that we may have missed on the two previous steps. We included documents associated with national action plans, monitoring and surveillance frameworks at the national and supranational levels, and policy frameworks dealing with the drivers of and plan for the mitigation of AMR. Documents dealing with surveillance, prevention, control, and containment of AMR were obtained from national and supranational programmes, such as the AMR containment programmes in developed countries like Sweden and the US, those in developing countries like India, and supranational policy documents from bodies like the Joint Programming Initiative on AMR. We looked for further documents mentioned in the body or reference list of all documents until

KEY MESSAGES

- The situation analysis tool can assess and monitor the progress made towards implementing the national action plan for antimicrobial resistance in the member states of the South East Asia region
- A multi-stakeholder review, conducted through guided discussions, table top exercises, and site visits as needed identifies strengths, challenges, and implementation gaps
- The tool has been developed in the context of developing countries with rudimentary or non-existent programmes for the containment of antimicrobial resistance

Box 1: Strategic objectives of the global action plan against AMR

1. Improve awareness and understanding of antimicrobial resistance through effective communication, education, and training
2. Strengthen the knowledge and evidence base through surveillance and research
3. Reduce the incidence of infection through effective sanitation, hygiene, and infection prevention measures
4. Optimise the use of antimicrobials in human and animal health
5. Develop the economic case for sustainable investment that takes account of the needs of all countries and increase investment in new drugs, diagnostic tools, vaccines, and other interventions

no more were found. We found a total of 42 documents—12 in the initial phase, 16 in the second stage, and 14 through hand searching the included texts.

Indicators for system-wide evaluation were extracted from the documents and, after expert input, were classified into seven focus areas, each of which tackled one or more of the five strategic objectives outlined in the GAP-AMR (box 1).⁶ The seven focus areas were: national AMR action plan; awareness raising; national AMR surveillance; rational antimicrobial use and surveillance; antimicrobial stewardship and infection prevention and

control; research and innovation; and One Health engagement (table 1).

Each indicator was graded on the extent of implementation using an incremental scale consisting of five phases based on an adaptation of the stages of implementation defined by Fixsen et al (table 2).⁷ The first phase—that of exploration and adoption—indicates that the process of designing an AMR containment programme has been initiated. Once the decision to implement the programme has been made, systems progress to the second phase—programme installation. The third phase—initial implementation—is one of the most

challenging phases for programmes in developing countries. After the early implementation barrier is overcome and the programme is scaled up, the fourth stage—full operation—is achieved. Once the programme starts to function at the highest grade of operational efficiency, the fifth and final stage—sustainable operation—is attained.

Situation analysis process and definitions

The situation analysis process using our tool is designed to be a multi-stakeholder review, to be performed jointly by national stakeholders and WHO. National stakeholders

Table 1 | Indicators for situational analysis and monitoring of AMR

WHO strategic objective	Focus area	Indicator	Description and best practices
2	National AMR action plan (NAP)	NAP in line with GAP-AMR	Comprehensive and multisectoral NAP implemented with a coordination body, an operational plan, a monitoring system and adequate funding
2	National AMR surveillance system	Laboratory based AMR surveillance system	National human AMR surveillance in place and functional to monitor AMR trends accurately and timely with national guidelines and regulations (minimum representative datasets, standards, definitions, methodology, standards of quality implemented)
		Laboratory capacity strengthening	A national network of quality assured laboratories that contributes quality and proper data to national AMR surveillance
		Early warning system	Early warning systems with integrated rapid response mechanisms have been incorporated in the human AMR surveillance system
4	Rational use and surveillance (community level)	National antimicrobials containment policy	A national AMR containment policy for control of human use of antimicrobials that is implemented and enforced. AMR containment policies include vaccination policies and high coverage where appropriate
		National regulatory authorities	Competent and functional regulatory authority with capacity to ensure and enforce antibiotic quality standards, to take measures against substandard products, and to inspect pharmacies.
		Regulation of finished antibiotic products and active pharmaceutical ingredients (APIs) used to manufacture antibiotics for human use	Comprehensive, multisectoral drug act is implemented nationally to regulate the production/manufacture import/export of antibiotics and APIs where appropriate
		Regulation of supply chain	A national policy or act is in place to regulate the supply chain management of antibiotics and APIs.
		Regulation of pharmacies	Presence of a regulatory system, with monitoring and evaluation frameworks, to prevent over the counter sale and inappropriate sale of antibiotics and APIs
		Surveillance of use and sale of antimicrobials in the human sector	Surveillance is in place and is functional to monitor sales and use in humans that produces representative and quality data
3	Infection prevention control and AMR programme in healthcare settings	Surveillance of healthcare associated infections and antimicrobial use	Formulation of national guidelines and policy on healthcare associated infections and antimicrobial use for healthcare facilities Hospitals are mandated to undertake surveillance and report healthcare associated infections as a part of continuous quality control in patient care services. Surveillance data to be analysed and centralised for monitoring purposes
		AMR stewardship programme	Training, education, and capacity building programme. Protocols, SOPs and guidelines for IPC are available based on nature and type of healthcare facility
		Policies and practices and governance mechanisms for the programmatic control of emergence of AMR in healthcare settings	Formulation of a national policy on infection prevention and control for healthcare facilities. Implementation of an AMR control programme providing guidance and best practices for implementing antimicrobial stewardship and rational use of antimicrobials in each healthcare facility
1	Awareness raising	Antibiotic awareness campaign	Implementation and monitoring of a national programme to improve awareness of AMR and AMR containment interventions
		Professional education and training	Implementation and monitoring of policy on education and training strategies for professionals, paraprofessionals, and other occupational groups
5	Research and innovation	Proper environment for research and innovation	Investing in development of new drugs, diagnostics, and interventions through increased research funding. National policy to promote and foster innovation to combat AMR
		Horizon scanning	Latest updates on research agenda and advances
1-5	One Health engagement	A national AMR containment policy and regulatory framework for control of animal use and their registration for use	Implementation, enforcement, and monitoring of national policy and plan on use of antimicrobials and regulatory frameworks for control of animal use and their registration for use
		Surveillance of use and sale of antimicrobials in veterinary sectors	The national policy and plan that identifies activities linked to use and sales of antimicrobials at national level in the veterinary sector and surveillance of AMR and antimicrobial usage
		Infection prevention and control in the animal sector. Animal health and agricultural practices	Development and implementation of best practices on infection prevention in animal by species or commodity. Surveillance and policies developed to control contamination of food abiding by the Codex Alimentarius standards
		Vaccination in animals to prevent and reduce infection in food animals	Development of a vaccination policy for animals, including outlining implementation strategies through microplans developed at local levels
		Awareness in animal sector	Strategy to engage veterinary sector in AMR prevention and control through awareness generation and education in the animal health sector

AMR=antimicrobial resistance; GAP-AMR=global action plan on AMR; IPC=infection prevention and control; NAP=national action plan; SOP=standard operating procedure.

Table 2 | Phases of implementing a programme for AMR prevention and control

Phase of programme implementation	What it means
Phase 1—Exploration and adoption	The country has no programmes systematically implemented to conduct AMR prevention and control. The process of designing a programme has been started and activities may include: Identifying needs, options, and resources Identifying potential barriers to implementation (funding, human resources, system responsiveness, etc) Investing in systems to augment the readiness to deploy the programme and to overcome the identified barriers in implementation Identifying structures (both in policy making and implementation frameworks) to help implementation of the programme As the nation gets closer to the end of phase 1, it gets closer to implementing (at any scale, even a pilot project) an AMR surveillance programme
Phase 2—Programme installation	The country has decided to implement a programme. Initial activities under way to launch the programme may include: Capacity building Resource allocation Establishing protocols for data transmission, security, and sharing Developing process indicators, standard operation protocols, and other guidelines to be adhered to by institutions participating in the programme The second phase places more emphasis on developing infrastructure and allocating resources to implement a programme in a defined context and then scale it up to the national context in the subsequent phases
Phase 3—Initial implementation	This is probably the most challenging phase in the early implementation of any programme in developing nations. In this phase, countries must initiate a change or an intervention, which may have patchy uptake or may be avoided altogether A functional model of the programme is identified All protocols, standard operation protocols, and guidelines undergo a real world challenge This is a crucial phase and most programmes linger in it
Phase 4—Full operation	This is the process of scaling up a successful model of the programme that may have been trialed in the previous phase. The programme is part of accepted practice There is a nation-wide (or large scale) adoption of the programme The programme is functional and generating outputs and outcomes on a regular basis (seek proof of evidence)
Phase 5—Sustainable operation	This is the highest grade of operational efficiency of the programme and indicates that the programme can have long term survival. The programme is resilient to changes in funding volume, partner agency support, and external factors that were essential for its installation and initial implementation Through a functional mechanism for monitoring and evaluation, capacity of the programme is systematically improved to enable it to function without extensive need to invest in continued capacity building

assess themselves and provide evidence and justification. WHO facilitates the process and helps reach a consensus on the grading through guided discussions. The guided discussion technique^{8,9} is used to elicit dialogue and exchanges between reviewers and stakeholders. Core questions trigger discussions on each focus area. We defined a functional system as a system that shows sound procedures, interdepartmental interactions, leadership, governance and funding capacity, and outputs (reports, decisions translated into actions).¹⁰

Based on the outcome of the multi-stakeholder review, a thematic situation analysis might be conducted. A combination of the review for capacity and that for functionality describe at which stage the AMR containment programme is positioned for each focus area.

Results of the process can be summarised in the form of an analysis of strengths and challenges, mapped using the phases attained by the indicators for each strategic objective. Indicators in the first two phases of implementation are considered to contribute to challenges and vulnerability of the system, whereas those in the three higher phases are considered to be strengths of the system.

Existing tools and approaches to monitor AMR

Two monitoring and evaluation frameworks have been widely implemented globally for assessment of national AMR containment programmes—the WHO rapid assessment tool for country situation analysis and the international health regulations joint external evaluation tool.

The WHO rapid assessment tool was used to determine the extent to which effective practices and structures to tackle AMR were already in place and where gaps remained.⁴ A total of 133 of the 194 WHO member states provided information. The tool covered the six objectives of the 2011 WHO strategy as a questionnaire with largely close ended questions; it was submitted to national health authorities for self assessment and reporting, which may be biased and of limited credibility. The WHO rapid assessment tool has a limited scope to provide insights on how operational an AMR containment programme is. Furthermore, it does not adequately assess engagement with and response from One Health and related mechanisms that are important for AMR prevention and control.

More recently AMR has been acknowledged as a threat to global economic stability and security.¹¹ The Global Health Security Agenda—a partnership between countries to “prevent, detect, and respond to biological threats”—was launched in 2013 and included AMR as one of the 11 priorities for global action.^{12,13} Building on this agenda¹² and other assessments, WHO developed the joint external evaluation tool^{13,14} to foster compliance with the core capacity requirements of the international health regulations. AMR is part of a larger set of public health issues concerning global health.¹⁵ Despite having functional indicators that might assess improvements in programme implementation over time, the joint external evaluation tool

fails to capture the complexity of AMR containment as detailed in the GAP-AMR. Many aspects of the strategic objectives of the global action plan are missing, including research and innovation and capacity strengthening. It does not capture the multisectoral essence and has minimal alignment with GAP-AMR. The One Health approach is measured in a broad way so that multisectoral governance over AMR containment is diluted. Stewardship activities are bundled together in one category. Although the joint external evaluation tool captures key elements of system-wide functionality regarding AMR containment programmes, progress against the threat of AMR requires comprehensive and concrete metrics that can be monitored and measured efficiently.

SEARO tool: Strengths, limitations, and recommendations

AMR is an ongoing silent epidemic across the world, which many countries have limited capacity to detect. Given the limited resources, competing priorities and political challenges could derail the implementation goals of the national action plan. Enabling all countries to measure progress towards sustained operations of the AMR containment programme is, therefore, essential.

The SEARO tool is organised around the development and implementation of national action plans (table 3). Through an extensive set of indicators, the tool provides information on comprehensive governance, policy, and systems analysis and can be applied at the community as

Table 3 | Instrument for country situation analysis and monitoring of antimicrobial resistance in South East Asia

Indicators	Phases				
	Exploration and adoption	Programme installation	Initial implementation	Full operation	Sustainable operation
1. National AMR action plan					
NAP in line with GAP-AMR	No action plan or no national multisectoral committee or AMR committee established but involving one ministry	AMR working group established and national action plan under way	Action plan aligned with GAP including operational plan with defined activities and respective budget available	Action plan includes operational plan being rolled out and scaled up with defined activities and respective budget	Action plan includes operational plan being rolled out and scaled up with defined activities and respective budget
2. Awareness raising					
Awareness campaigns to the public	Government not involved in awareness raising activities on antibiotic resistance	Some government led activities in parts of the country to raise awareness about AMR and actions to tackle it	Nationwide, government led antibiotic awareness campaign targeting the general public or professionals	Nationwide, government led antibiotic awareness campaign targeting public and professionals	Assessing effects of government led awareness campaigns on behaviour changes in public and professionals
Education and training strategies for professionals	No policy or strategy	Relevant policies developed but ad hoc training courses in some disciplines	AMR included in some preservice training or special courses or both OR Continuous professional development and regular audit of learning	AMR included in some preservice training or some special courses or both AND Continuous professional development and regular audit of learning	AMR included in preservice training for all relevant cadres Regular continuing professional development
3. National AMR surveillance system					
National human AMR surveillance	No capacity for AMR laboratory or limited reporting or both, or no surveillance guidelines	Guidelines developed but not fully implemented. Limited quality data and analysis and not fully representative of country	Standardised national AMR surveillance in place and representative of country but limited number of operational sites	Surveillance in place and functional to monitor AMR trends accurately and timely but no contributing data to GLASS	National AMR surveillance regularly assessed and adjusted; and contributing to GLASS
National laboratory network strengthening	No national network developed	A national network with testing according to the international standards is planned	A national reference laboratory is identified, and quality assured laboratory networks have been developed only at few surveillance sites	A national network of EQA health laboratories has been developed in most or all surveillance sites	A laboratory network is established, EQA measures are in place, and the reference laboratory has demonstrated capacity for research
Early warning systems	No system in place or planned	System planned, in keeping with international standards	System is implemented in pilot mode, or is implemented on a national scale but not fully functional (not sensitive to reportable events)	Demonstrated functional capacity: data centralised and analysed with reports	Demonstrated functional capacity and proof of response from detection
4. Rational use of antimicrobials and surveillance of use and sale (community based)					
A national AMR containment policy for control of human use of antimicrobials; AMR stewardship (AMS)	No or weak national policy and plan, regulations for antimicrobial use, and availability	National AMS programme (AMSP) planned and under development	AMSP is developed, including tools to implement and monitor AMS progress and impact	AMSP implemented by relevant institutions. Regulations for antimicrobial use and availability are implemented in limited capacity	A national AMSP for control of human use of antimicrobials has been implemented and enforced for more than 2 years
National Regulatory Authorities (NRA) or Drug Regulatory Authorities (DRA)	No official NRA or DRA or those existing have limited capacity	NRA or DRA with limited capacity but strategic planning in place for capacity building and appropriate budgeting	NRA or DRA system set up for oversight but not fully functional	Tools for quality assurance and registration of antibiotics in place and inspection implemented but limited capacity for enforcement of policies and regulation	Competent and functional NRA or DRA with capacity to ensure or enforce antibiotic quality standards, to take measures against substandard products and to inspect pharmacies
Surveillance of antimicrobial use and sales in humans	No guidelines for surveillance of use or sales of antimicrobials or both	National policy and plan on surveillance of use of antimicrobials under development or developed and approved but not implemented (surveillance in individual facilities and national level sales)	Monitoring sales of antimicrobials at national level not implemented. Monitoring of use is irregular and limited to few facilities that are not representative	National sales data are collected on a regular basis (every 1-2 years). Data are collected from a small and not representative sample of individual healthcare facilities. No established analysis with national AMR laboratory based surveillance	National sales data are collected on a regular basis (every 1-2 years). AMU surveys are conducted in a representative sample of facilities and translated into actions. Links with national AMR surveillance data are analysed and reported
Regulation of finished antibiotic products and APIs	No official regulation on import, export, production, distribution, and use of finished antibiotic products and APIs or those existing have limited capacity	Regulation with limited capacity but strategic planning in place for capacity building and appropriate budgeting	Regulatory authority and system set up for oversight with a limited functional capability	Regulatory authority and system in place and inspection implemented but with limited capacity for enforcement of policies and regulation	Regulatory authority and system in place and are fully and effectively implemented
Regulation of pharmacies on over the counter sale and inappropriate sale of antibiotics and APIs	No official regulation on over the counter sale and inappropriate sale of antibiotics and APIs	Regulation with limited capacity but strategic planning in place for capacity building and appropriate budgeting	Regulatory authority and system set up for oversight with a limited functional capability	Regulatory authority and system in place and inspection implemented but with limited capacity for enforcement of regulation	Regulatory authority and system in place and are fully and effectively implemented

Table 3 | Continued

Indicators	Phases				
	Exploration and adoption	Programme installation	Initial implementation	Full operation	Sustainable operation
5. Infection prevention control and AMR stewardship programme					
AMR stewardship programme in healthcare setting	No national AMR stewardship policy or operational plan is available or approved	A national IPC or AMR policy or operational plan is available but weak. SOPs, guidelines, and protocols not available to all hospitals (limited updates)	National IPC, AMR aligned IPC, or AMR plans implemented in limited number of healthcare settings	National IPC, AMR aligned IPC, or AMR plans are implemented in about all healthcare settings	IPC or AMR measures are widely implemented and regularly evaluated and shared
IPC programme in healthcare setting	No national IPC policy, guidelines, or action plans to mandate IPC in healthcare settings	A national capacity building programme, or operational plan, is developed. SOPs, guidelines, and protocols are developed and available but not implemented	IPC programme and capacity building plans are implemented in selected healthcare settings	IPC programme and capacity building plans implemented nationwide	IPC capacity building and programme effectiveness are regularly evaluated and shared
National HAI and related AMR surveillance	No policies, limited national plan and guidelines to mandate hospitals for HAI surveillance	Few public and private facilities have HAI surveillance but data not centralised at national level	Few public and private facilities have HAI surveillance and share data at national level	Centralised data on HAI from several hospitals but with limited capacity for data analysis and detection	Monitoring and response frameworks established to identify critical HAI events, especially related to emergence of AMR indicator bacteria against critical drugs
Sanitation, hygiene, and vaccination	No formal campaign on sanitation, hygiene, and vaccination	Formal campaign to enhance sanitation, hygiene, and vaccination being developed	Formal campaign to enhance sanitation, hygiene, and vaccination is implemented in small scale	Formal campaign to enhance sanitation, hygiene, and vaccination is implemented in large scale	Formal campaign to enhance sanitation, hygiene, and vaccination is implemented in large scale and associated with a monitoring and evaluation system
6. Research and innovation					
Research and development and innovation on AMR prevention and containment (plus research funding)	No policies fostering research environment although capacity exists for research	Policies planned and existing structure has a plan to foster research and innovation on AMR	Presence of policies and investments to foster research and innovation on AMR	Research consortium and dynamic research programme are ongoing led by government agenda	Government led research outputs related to AMR global research agenda
7. One Health engagement					
A national AMR containment policy and regulatory framework for control of animal use and their registration for use	No national policy or plan to reduce use of antibiotics	National policy and plan on use of antimicrobials developed and approved or regulatory framework for control of animal use and their registration for use is developed but not implemented	Implementation of policy and plan but limited capacity for monitoring use and quality of drugs	Policy and plan implemented with some capacity for monitoring but limited capacity for enforcement	Policy and plan implemented with proper capacity for monitoring and increased capacity for enforcement
National surveillance of AMR and use and sales of antimicrobials at national level in the veterinary sector	No or weak national policy and guidelines	Limited capacity for surveillance of sales, AMR, or AMU	Some capacity and data generated from sales, AMR or AMU	Some comparative analysis of surveillance data between AMR and AMU	Comprehensive approach of surveillance with coordinated analysis between humans and animals
Infection prevention and control in the animal sector	No policy and national guidelines developed for biosecurity to reduce infection rates in food and both large producers and small holders	Policies and national guidelines in line with international standards planned including vaccination policy and Codex Alimentarius standards	Limited implementation, particularly in large producers	Full implementation	Fully implemented in multiple areas with a monitoring framework in place
AMR awareness generation and education in the animal sector	No policies or strategies exist or are only planned	Policies or strategies developed	AMR in some pre-service training or special courses or both OR Continuous professional development and regular audit of learning	AMR in some pre-service training or special courses or both AND Continuous professional development and regular audit of learning	Effect of education programme on behaviour changes is assessed

AMR=antimicrobial resistance; AMU=antimicrobial usage; API=active pharmaceutical ingredient; EQA=external quality assessment; GAP-AMR=global action plan on antimicrobial resistance; GLASS=global antimicrobial resistance surveillance system; HAI=hospital acquired infections; IPC=infection prevention and control; NAP=national action plan; SOP=standard operating procedures.

well as the systems level. It provides a combination of functionality and capacity assessment and can be used repeatedly over time to assess progress. It focuses on areas where active participation, political will, and stakeholder engagement are crucial to success, thereby giving a glimpse into the extent of involvement of

the political and governance machinery in tackling AMR concerns. Additionally, it emphasises engagement with One Health in a trans-sectoral sense, at the policy implementation level, which is critical given that antimicrobial use in the veterinary sector is a major determinant of the emergence of AMR.

The incremental phases through which the indicators progress are also indicative of systems building over time, fostering ownership, collaboration, and transparency. Compared with other assessment tools, the language used to describe the different stages of development encourages countries

and allows them to benchmark their progress.

Moreover, we provide a clear direction to AMR containment in terms of best practices, best policies, and system development including a roadmap in the form of an infographic (see data supplement on bmj.com). In the last phase—sustainable operation—components of sustainability are clearly implemented with secured funding and a monitoring and evaluation system that documents findings and subsequent changes made for improvement.

The SEARO tool is limited by its inability to assess the quality of implementation of framed policies and programmes, as it only assesses the extent to which the programmes are implemented. Considering that the countries currently using the tool have no or rudimentary programmes for AMR containment, however, assuring implementation is the essential first step. Once most countries reach phase 4—full operation—further steps could be added between phases 4 and 5 to monitor quality.

We have piloted the tool in three countries—Indonesia, Maldives, and Sri Lanka—and found that these countries appreciated the tailored tool and the one-to-one assistance we provided, which identified problems pertinent to the countries, many of which have systems gaps and relatively rudimentary programmes for containment of AMR that need extensive support and strengthening.

Traditionally, AMR surveillance has not been included in the health related priorities of countries in South East Asia. Consequently, in keeping with the GAP-AMR, tools that focus on building and strengthening systems are critical, rather than tools that assess the quality of programme implementation. Countries should focus on adopting pragmatic and relevant approaches that consider the regional peculiarities that drive the emergence and progress of AMR. Tools should not focus on inter-country comparisons but rather allow

individual member states to prioritise and formally document the most urgent needs of individual nations to enhance implementation of AMR surveillance programmes. The SEARO tool is likely to fulfil these objectives by providing individual member states with an understanding of the current status of AMR surveillance implementation; this, in turn, should provide scaffolding for a customised national action plan that is driven by national priorities. WHO's regional and country offices are committed to supporting administration of the tool to ensure that AMR is tackled successfully.

Contributors and sources: All authors participated in the development of the manuscript. SV conceptualised the article and, in discussion with AS and MK, drew up the outline. MK was responsible for conducting the review and developing the tool. He wrote the first draft of the article. AS and SV reviewed the tool, including pilot testing, and provided inputs in subsequent drafts based on pilot experiences. All authors participated in revising the drafts and approving the final. SV is the guarantor.

Funding: This work was commissioned by the WHO Regional Office of South East Asia using the UK government's Fleming Fund. The authors alone are responsible for the views expressed in this article, which does not necessarily represent the views, decisions, or policies of the institutions with which the authors are affiliated.

Competing interests: The authors have read and understood BMJ policy on declaration of interests and declare no competing interests.

Provenance and peer review: Commissioned; externally peer reviewed.

This article is one of a series commissioned by *The BMJ* based on an idea from WHO SEARO. *The BMJ* retained full editorial control over external peer review, editing, and publication. Open access fees are funded by the WHO SEARO.

Manish Kakkar, WHO consultant

Anuj Sharma, antimicrobial resistance focal point

Sirenda Vong, regional technical lead

World Health Organization, Office of South East Asia region, New Delhi, India

Correspondence to: SVong
vongs@who.int

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Cite this as: *BMJ* 2017;358:j3760
<http://dx.doi.org/10.1136/bmj.j3760>



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