

USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

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Integration of the WHO Antibiotics AWaRe Categorization in National Antimicrobial Stewardship Programs: Experiences from MTaPS-Supported Countries

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Outline

- Context
- Approach
- Results
 - Development/integration of AWaRe
 - Implementation of AWaRe in practice
- Lessons learned
- Conclusion



Context



Source: WHO AWaRe Portal - <https://adoptaware.org/>

- Inappropriate antimicrobial use is a major driver of antimicrobial resistance (AMR)
- Antimicrobial stewardship (AMS) efforts are essential to improve antimicrobial use and contain AMR
- In 2017, WHO introduced a novel but simple approach to enhance AMS called AWaRe
- This approach classifies antibiotics included in essential medicines lists (EMLs) into three categories:
 - Access (A)
 - Watch (Wa)
 - Reserve (Re)

Approach

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A Technical Guide to Implementing the World Health Organization's AWaRe Antibiotic Classification in MTaPS Program Countries

Background

Ensuring access to and appropriate use of good-quality antimicrobials is a key priority of global strategies to combat antimicrobial resistance (AMR). A majority of countries have developed national action plans based on the 2015 World Health Organization (WHO) Global Action Plan for Antimicrobial Resistance.¹ In an effort to address the major component of the International Health Regulations related to containing AMR and to guide countries' implementation of antimicrobial stewardship (AMS) programs, WHO released a set of recommendations to help global, regional, and national policy makers develop guidelines on which antibiotics (ATB) to use and when.² The resulting AWaRe (Access, Watch, Reserve) classification tool³ is meant to be applied to a country's essential medicines lists (EMLs) with the ATB placed in one of three primary categories:

ACCESS: These are the ATB of choice for each of the 25 most common infections. They should be available at all times, affordable, and of assured quality. This group will include first-choice antibiotics (sensitive, narrow-spectrum ATB with low toxicity and propensity to develop resistance) and second-choice antibiotics (sensitive, broader-spectrum ATB with both increased risk of toxicity and potential to develop resistance).

- MTaPS developed a practical 11-step implementation miniguide* from the WHO AWaRe technical document**
- As part of overall AMS improvement, MTaPS supported each country to establish or strengthen national multisectoral AMS technical working groups (TWGs)
- Built capacity within AMS TWGs to use the AWaRe concept and approach
- MTaPS, in collaboration with WHO country offices, co-facilitated workshops assisting countries to analyze their epidemiological profile to identify:
 - Prevalent infectious disease syndromes
 - Sensitivity profiles of causal microbes to antibiotics

*USAID MTaPS. https://www.mtapsprogram.org/wp-content/uploads/2021/03/USAID-MTaPS_Implementing-WHO-AWaRe-Classification.pdf

**WHO: <https://www.who.int/publications/i/item/2021-aware-classification>

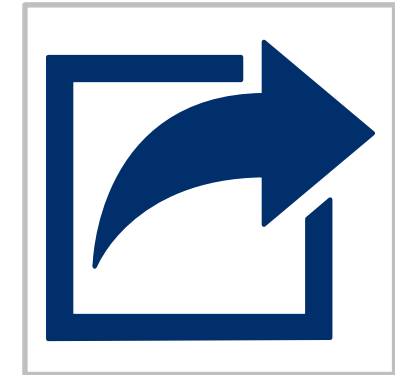
Steps in Developing, Integrating, and Implementing AWaRe Categories



Developing AWaRe
categories



Integration into key AMS
documents



Implementation/
sustainability

Developing AWaRe Categories (I)



1. Desk Review

Review the current national essential antibiotics list against the WHO AWaRe list of 39 antibiotics and explain discrepancies

2. Epidemiological Review

Gather evidence about local epidemiology of prevalent infectious diseases, including causal microorganisms

3. Resistance Profile

Establish the antibiotic resistance/sensitivity profile of causal microorganisms

4. Antibiotic Supply Chain

Review the supply chain of antibiotics to establish access and availability as well as market authorization for commonly used antibiotics

Developing AWaRe Categories (2)



5. List First- and Second-Choice ATBs

List the sensitive and accessible antibiotics that will fall in the first and second choices for empirical treatment of prevalent syndromes according to the three categories: Access, Watch, Reserve

6. Select Measuring Indicators

Discuss indicators that will be used to measure consumption and use in each category

7. Add Notes

Add important notes for program managers and prescribers that will inform the revision of national standard treatment guidelines and antibiotic formularies

Implementation and Institutionalization



8. Establish Monitoring System

Establish a robust monitoring system at the central and peripheral levels to collect and report data on consumption of ATBs

9. Set Up Global Reporting

Ensure regular data reporting on antibiotic consumption to the WHO Global Antimicrobial Resistance Surveillance System platform

10. Intermediate Milestones

Establish intermediate milestones with a goal to reach 60% of antibiotics used coming from the Access group by 2023

11. Strong AMS Program

Establish strategies to implement AMS programs that will strengthen adherence to guidelines, including STGs and formularies

Approaches Adopted by Countries to Develop AWaRe Categories

Approach	Number of Countries*
MOH/AMR TWG-owned process	10
Consultant-led process	4
WHO-led process	1
Adopted/contextualized the WHO classification	7
Used national data for country classification	1**
Completed as part of EML revision	4
Completed after EML revision	3
Addendum to EML developed	2

*Number is out of the 13 countries MTaPS supports for GHSA

**One country that opted for full national classification using country data has not yet completed classification

Developing and Integrating AWaRE into AMS Documents[∞]

Level of Activity	Step	# of countries
Categorization	Build capacity of national AMS committee	13
	Select ID syndromes of national importance	10
	Determine sensitivity profile	8
	Conduct AWaRe classification workshop	7
Integration into documents	Establish essential antibiotics list (EAL)	7
	Integrate EAL into EML	6*
	Develop/revise STG integrating AWaRe	4
	Revise formularies integrating AWaRE	5
	Develop/revise guidelines on antibiotics use	1

[∞]Numbers as of September 2022

*One country worked directly on developing standard treatment guidelines

Progress Implementing AWaRE and Ensuring Sustainability[∞]

Activity Area	Activity Detail	# of countries
Implementation/sustainability	Include in regulatory framework	1
	Integrate in UHC	2
	Integrate in PPS assessments	1
	Monitor AMU/AMC based on AWaRe	4
	Countries report AMC to WHO GLASS Platform	3
Facility implementation	Facilities use AWaRe concept for selection and use of antibiotics	5 (94 facilities)

[∞]As of September 2022

Discussion

- The AWaRe classification is slowly becoming a principal tool to analyze consumption[†] and hospital use[‡] of antibiotics
- MTaPS' stepwise approach has simplified a complex process, enabling low- and middle-income countries to increase uptake
- Implementation approaches varied by country depending on context, resources, and time constraints
- Countries with no systems to gather and use country data were able to adopt and contextualize the WHO classification
- Moving beyond classification to using the categories to improve antibiotics use is important
- The stepwise approach provided implementation accountability post-classification

[†] Jia Yin et al. Analysis of Antibiotic Consumption by AWaRe Classification in Shandong Province, China, 2012–2019: A Panel Data Analysis. Published online 2021 Nov 22

[‡] Yingfen Hsia et al. Use of the WHO Access, Watch, and Reserve classification to define patterns of hospital antibiotic use (AWaRe). Published July 2019 DOI: [https://doi.org/10.1016/S2214-109X\(19\)30071-3](https://doi.org/10.1016/S2214-109X(19)30071-3)

Important Practical Considerations for Institutionalizing AWaRe

- Include AWaRe prominently in country's AMS action plans
- Identify ways of advancing AWaRe at the national and facility levels (NMTCs/DTCs)
- At the facility level, DTCs/AMS committees play a strong role in advocating, promoting, training, and monitoring adherence to AWaRe
- Work with ID experts to systematically integrate AWaRe in all future STGs, formularies, EMLs, and any other activities related to the rational use of antimicrobials
- Monitor supply chain to ensure all-time availability of different classes of ATBs at stipulated levels in the STG

NMTCs – National Medicines and Therapeutic Committees; DTCs – Drug and Therapeutic Committees



Essential Medicines Adviser at WHO Tanzania Ms. Rose Shija presenting on the AWaRe categorization of antibiotics during the first workshop for classification of antibiotics registered in Tanzania into AWaRe classes.
Photo credit: Richard Valimba, STA MTaPS

Lessons Learned

- Building capacity of local stakeholders to understand and use new tools is a critical step in uptake.
- Once capacity is built and steps mastered, the MOH takes complete ownership and drives the rest of the process.
- Initiating the AWaRe classification just before the EML revision cycle starts was the best way to ensure integration. Countries that classified outside of EML revision struggled with integration.
- Integrating AWaRe refined and eased the process of revising guidelines (STGs, formularies, ABT procurement and distribution/use guidelines).
- A circular from the MOH instructing the use of AWaRe to monitor and report consumption serves as an impetus to facility drug and therapeutics committees/AMS committees to organizing their ATB stewardship strategies



Dr. Brycesson Kiwella, practicing orthopedic surgeon and Tanzania Orthopedic Society representative, at the stakeholder workshop to classify antibiotics into AWaRe categories. Photo Credit: Dr. Jackson Ilangali

Conclusion

- Any country, regardless of development status or resource level, can adopt the AWaRe classification as a tool for AMS
- Adopting the AWaRe classification:
 - Elevates the EML to an AMS tool rather than just a supply chain tool
 - Gives the country an opportunity to set and monitor targets for ATB consumption
 - Facilitates measuring and reporting facility AMC/AMU

Access	
Amoxicillin	Azithromycin
Amoxicillin and clavulanic acid	Cefixime
Ampicillin	Cefotaxime
Benzathine benzylpenicillin	Ceftriaxone
Benzylpenicillin	Ciprofloxacin
Cefalexin or cefazolin	Clarithromycin
Chloramphenicol	Piperacillin and tazobactam
Clindamycin	Meropenem
Cloxacillin	Vancocycin
Doxycycline	
Gentamicin or amikacin	* Antibiotics that are also in the Watch group
Metronidazole	
Nitrofurantoin	
Phenoxymethylpenicillin	
Procaine benzylpenicillin	
Spectinomycin	
Sulfamethoxazole and trimethoprim	
Core access antibiotics	

Watch
Anti-pseudomonal penicillins with beta-lactamase inhibitor (eg, piperacillin and tazobactam)
Carbapenems or penems (eg, faropenem, imipenem and cilastatin, meropenem)
Cephalosporins, third generation (with or without beta-lactamase inhibitor; eg, cefixime, cefotaxime, ceftazidime, ceftriaxone)
Glycopeptides (eg, teicoplanin, vancomycin)
Macrolides (eg, azithromycin, clarithromycin, erythromycin)
Quinolones and fluoroquinolones (eg, ciprofloxacin, levofloxacin, moxifloxacin, norfloxacin)

Reserve
Aztreonam
Cephalosporins, fourth generation (eg, cefepime)
Cephalosporins, fifth generation (eg, ceftaroline)
Daptomycin
Fosfomycin (intravenous)
Oxazolidinones (eg, linezolid)
Polymyxins (eg, colistin, polymyxin B)
Tigecycline



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Thank you

Questions?



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