

Thailand's National Strategic Plan
on Antimicrobial Resistance
2017-2021



Governance, surveillance and strategy to encourage appropriate use in the non-human sectors

Dr. Nithima Sumpradit

Food and Drug Administration, Ministry of Public Health, Thailand

nithima@fda.moph.go.th

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Sharing experiences

- **Regional WHO webinar (6 July 2021)**
 - Thailand's NSP-AMR implementation under the One Health approach: a human health perspective
- **Global WHO webinar (Today's agenda)**
 - Governance, surveillance and strategy to encourage appropriate use in the non-human sectors

Thailand's national strategic plan on antimicrobial resistance: progress and challenges

Nithima Sumpradit,^a Suriya Wongkongkathep,^b Kumthorn Malathum,^c Noppavan Janejai,^d Wantana Paveenkittiporn,^d Thitipong Yingyong,^e Teerasak Chuxnum,^e Amornrat Vijitleela,^f Phairam Boonyarit,^b Chutima Akaleephan,^b Weerawat Manosuthi,^e Varaporn Thienthong,^e Julaporn Srinha,^g Supaporn Wongsrichai,^g Thitiporn Laoprasert,^h Pornpimon Athipunyaikom,ⁱ Nathaya Kriengchaiyaprug,^j Kingdao Intarukdach,^k Sukanya Numsawad,^a Nuntiya Somjetanakul,^a Sirima Punnin^a & Niyada Kiatying-Angsulee^l

Abstract Antimicrobial resistance is a serious threat that affects all countries. The Global Action Plan on antimicrobial resistance and the United Nations Political Declaration on antimicrobial resistance set standards for countries to resolve antimicrobial resistance challenges under the One Health approach. We assess progress and challenges in implementing Thailand's national strategic plan on antimicrobial resistance 2017–2022, discuss interim outcomes and share lessons learnt. Major progress includes: establishing a national governance mechanism that leads high-impact policy on antimicrobial resistance and consolidates actions and multisectoral collaboration; creating a monitoring system and platform to track implementation of the strategic plan; and converting strategies of the strategic plan into actions such as controlling the distribution and use of antimicrobials in humans and animals. Interim results indicate that antimicrobial consumption in animals has nearly halved (exceeding the national goal of a 30% reduction) whereas other goals have not yet reached their targets. We have learnt that elevating antimicrobial resistance to high-level visibility and establishing a national governance mechanism is an important first step, and a monitoring and evaluation system should be developed in parallel with implementation. Securing funds is crucial. Policy coherence is needed to avoid duplication of actions. Highly ambitious goals, although yet to be achieved, can advance actions beyond expectations. Political commitment and collaboration across different sectors will continue to play important roles but might not be sustained without a well-designed governance structure to support long-term actions to address antimicrobial resistance.

Abstracts in [عربي](#), [中文](#), [Français](#), [Русский](#) and [Español](#) at the end of each article.

Introduction

Antimicrobial resistance is a prominent global threat that jeopardizes the health of humans and animals, and the economy of countries. Antimicrobial resistance also threatens global health security and hampers the achievement of the sustainable development goals (SDGs).^{1,2} In 2019, the World Health Organization (WHO) listed antimicrobial resistance in its top-10 global public health threats facing humanity³

to develop their action plans and align actions in tackling antimicrobial resistance.

Antimicrobial resistance affects every country,⁸ including upper-middle-income countries such as Thailand. Thus, in 2016, the government of Thailand endorsed the national strategic plan on antimicrobial resistance 2017–2021, which was recently extended to 2022. The plan takes the Global Action Plan on antimicrobial resistance into account and aligns political declarations with the national context. The plan

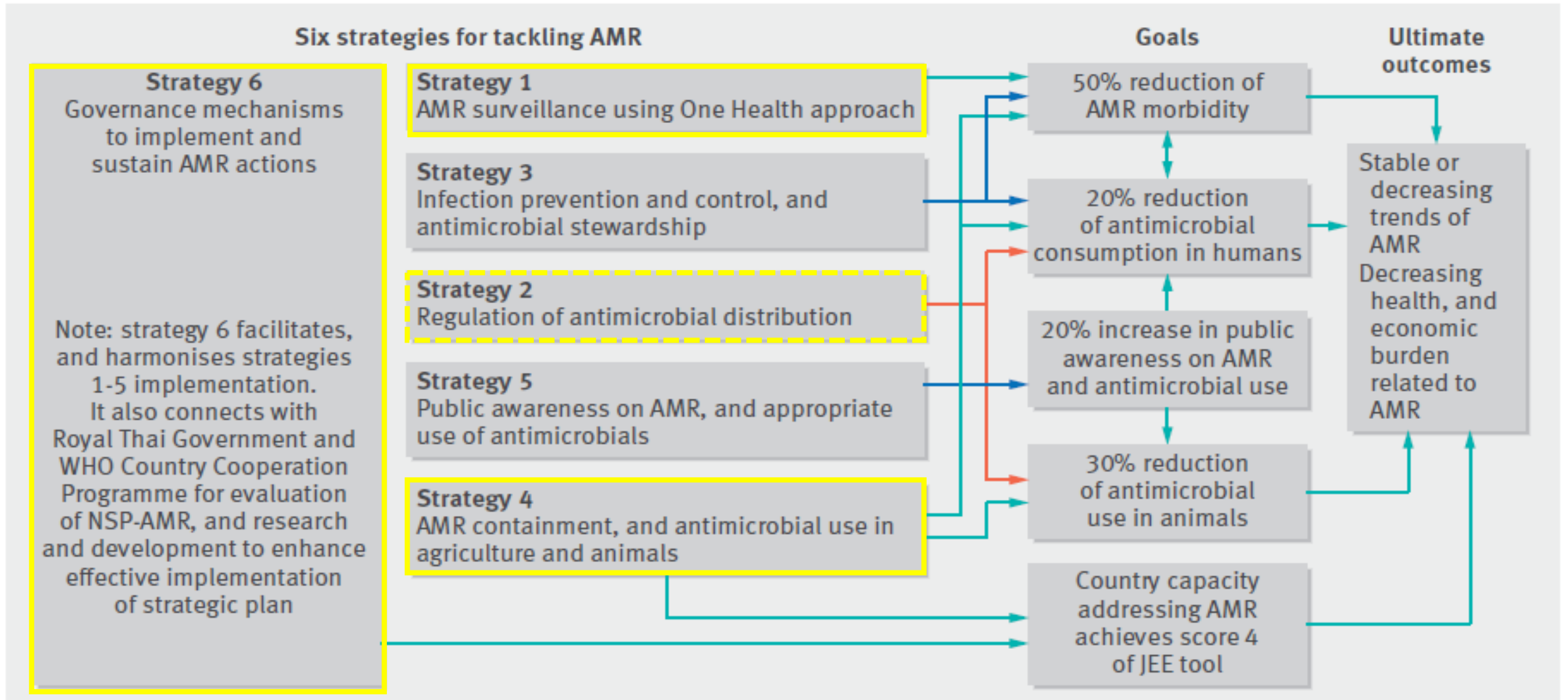
Antimicrobial use in humans

Data from Thailand's working group on surveillance of antimicrobial consumption¹¹ indicates that during 2017–2019, antimicrobial consumption in humans increased by 20.9% (from 68.7 to 83.0 defined daily dose per 1000 inhabitants per day),³³ compared with the goal of

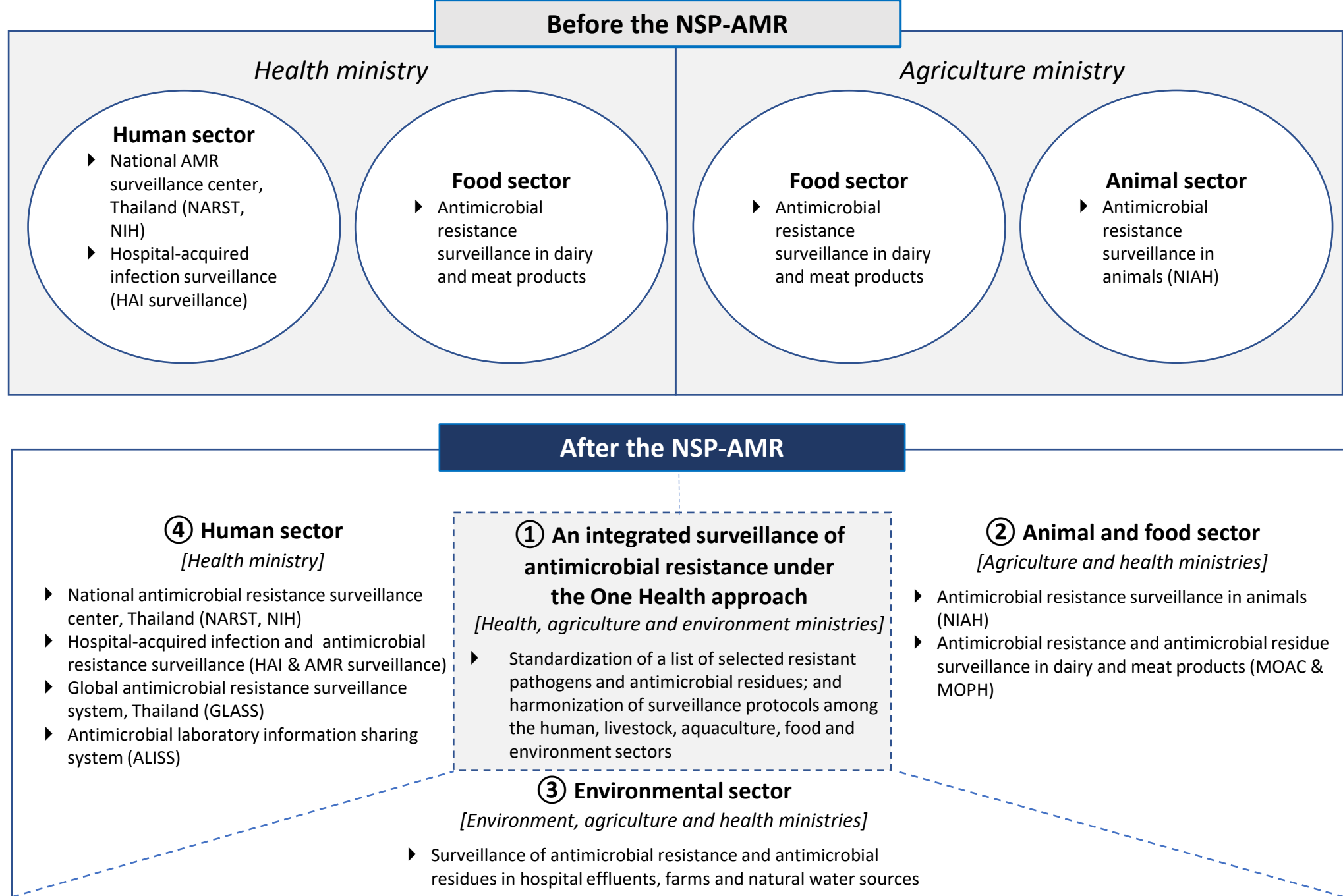
decreased by 5.6% (2017–2019) and by 15.2% (2017–2020)*

* Thai SAC 2020: interim report (to be finalized) (Krisanaphan et al). An update will be in a corrigendum.

Thailand's NSP-AMR (2017-2022)



Strategy 1. AMR surveillance under OH approach



Strategy 2. Regulation of antimicrobial distribution

- **Prior to the plan:**

- By law, almost all antibiotics can be dispensed by a pharmacist without a prescription.
 - Insufficient to safeguard antibiotics
- No national system to monitor antimicrobial consumption

- **After the plan:**

- Reclassification of antibiotics (aligning with WHO AWaRe concept)
- Development of Thailand's surveillance of antimicrobial consumption in humans and animals (SAC)
 - SAC assumption: $\text{Antimicrobial consumption} = (\text{Production} + \text{Importation}) - \text{Exportation}$

Reclassification of antibiotics

- In human sector

Phase	Prioritization matrix	Types of antibiotics	Status
1	High impact on inducing AMR/Low social resistance	<ul style="list-style-type: none">• Anti-TB drugs• Antibiotics for injection	<ul style="list-style-type: none">• Finished in 2019• Prescription drug
2	High impact on inducing AMR/High social resistance	Oral antibiotics	<ul style="list-style-type: none">• On-going
3	Low impact on inducing AMR/High social resistance	Antibiotics for external and tropical use	<ul style="list-style-type: none">• Next step

- In animal sector

- Started with colistin to be a prescription drug.
- Followed by Penicillins, Cephalosporins, Macrolides, Quinolones, Polymyxins and mediated premix as prescription drugs.

Strategy 4. AMR containment and antimicrobial stewardship in agriculture and animals

- Livestock, aquaculture, plants and companion animals
 - Educational approach is commonly used in all sectors.
- Key interventions used in livestock
 - International standards
 - Prohibition of growth promoter
 - Regulatory measures
 - Antimicrobial reclassification (Strategy 2)
 - Strengthening regulation on medicated feed production
 - Improving the meat-processing systems
 - Public-private partnership
 - Raised Without Antibiotic (RWA) initiative in swine farms
 - Reducing inappropriate use of antibiotics initiative

Strategy 6. Governance mechanism

National governance mechanism

Tier 1: National policy committee on AMR

(Deputy Prime Minister, Chair)

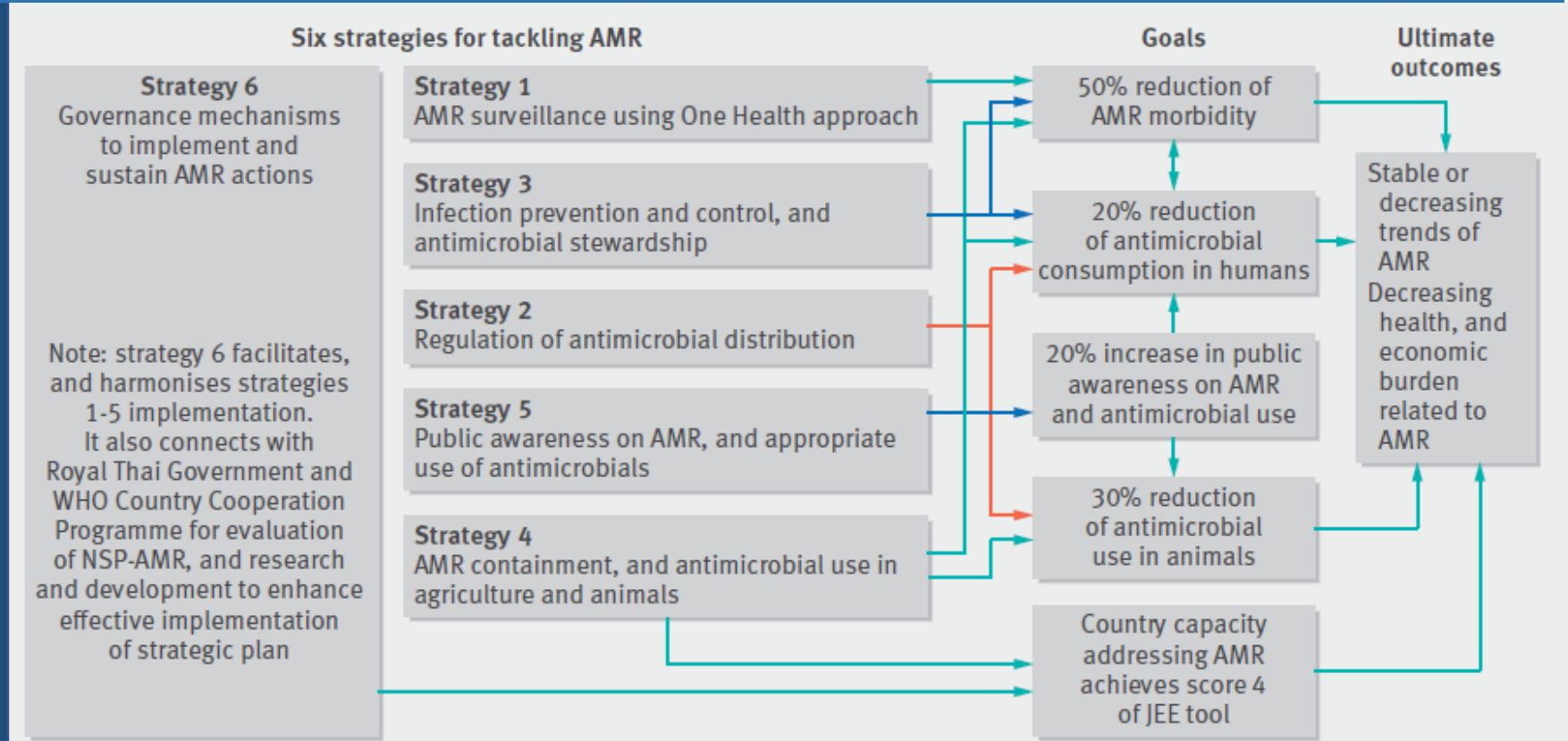
Tier 2: Five subcommittees

(Health minister, public health permanent secretary and agricultural permanent secretary, Chairs)

Tier 3: Strategic coordinating group (SCG)

(Deputy secretary-general of food and drug administration, Chair)

Funding for implementing strategies:
Government budget



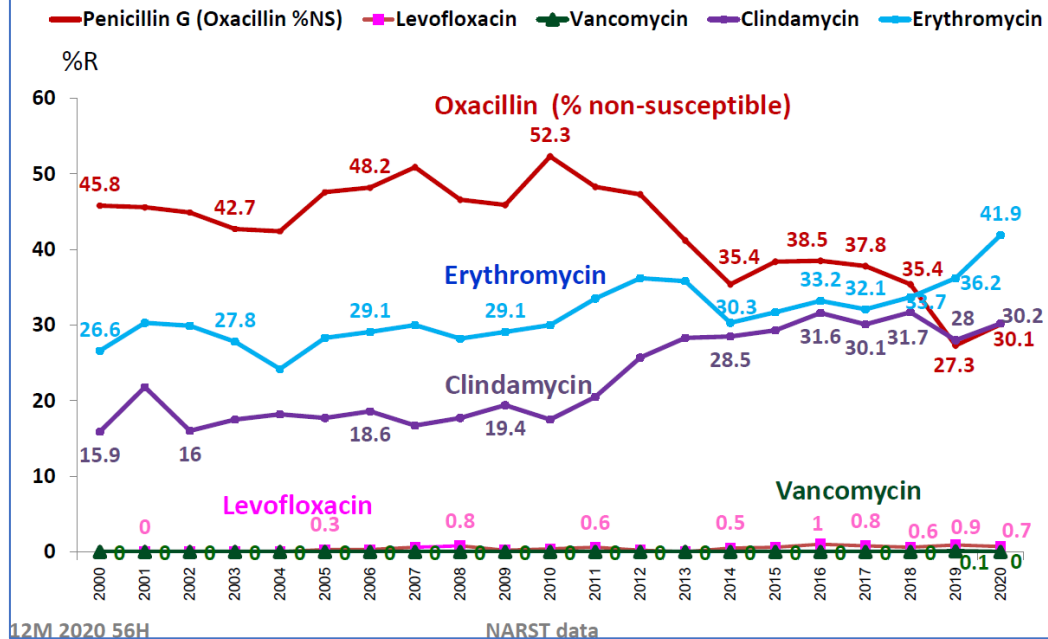
The WHO country cooperation strategy on AMR (CCS-AMR program 2017-2021)

- ▶ To generate evidence to support the plan
- ▶ To develop monitoring and evaluation systems
- ▶ To strengthen capacities of systems and networks

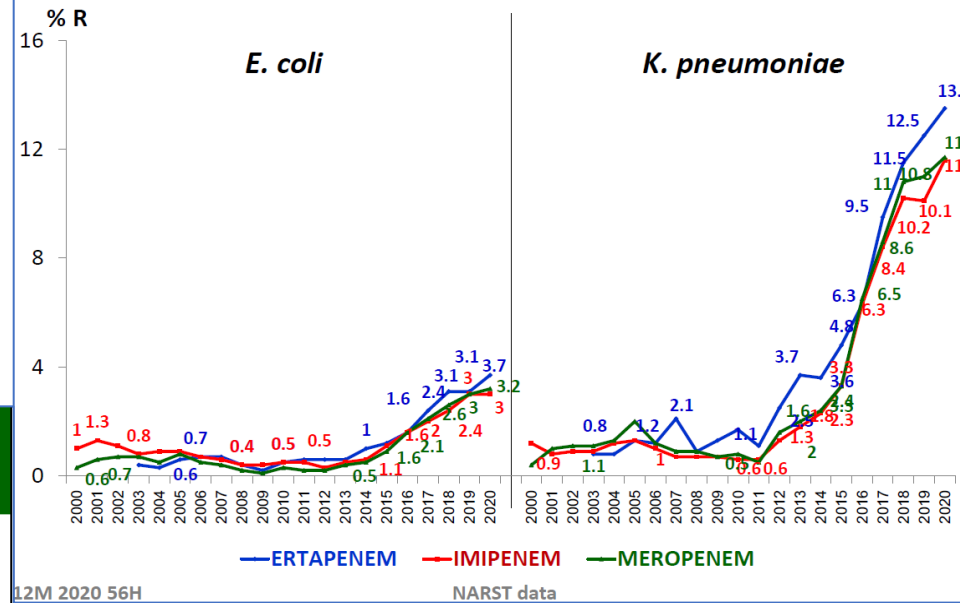
Pooled funding from WHO, Thai Health Promotion Foundation (Thai Health), National Health Security Office (NHSO), Health System Research Institute (HSRI) and Ministry of Public Health (MOPH)

Interim results Prevalence of AMR

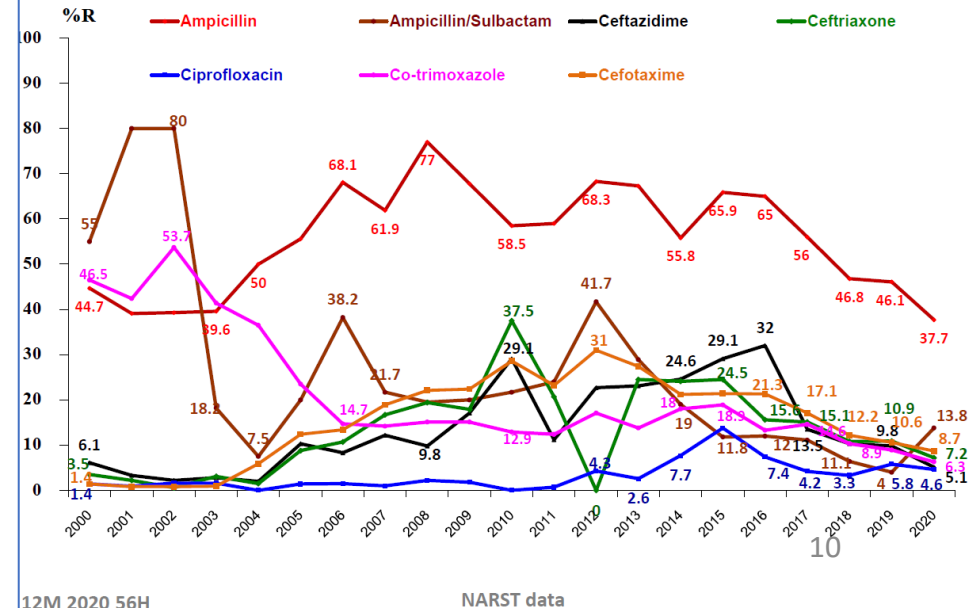
Antimicrobial Resistance rates of *S. pneumoniae* by year
(NARST - 56 hospitals, 12M 2020)



Carbapenem Resistance in *E. coli* and *K. pneumoniae*



Percent resistant of Non-typhoidal *Salmonella* isolated from Blood, 2000-2020 (12M)



Interim results

Antimicrobial consumption

Antimicrobial Consumption					
Goal	Unit	2017	2018	2019	
Human * 20% reduction	Defined Daily Doses/ 1000 inhabitants/day	54.6	50.5 (-7.5%)	51.6 (-5.6%)	➡ -15.2% (2020)
Animal ** 30% reduction	(mg/PCU _{Thailand})	658.7	522.0 (-20.8%)	336.3 (-49%)	➡ TBA (2020)
Sources: * Thailand SAC 2020: interim report (to be finalized). (Krisanaphan et al.)					
** Thailand One Health report on antimicrobial consumption and AMR in 2019 (HPSR-AMR, IHPP)					

Interim results

Country's capacity on AMR management

- 2017: First assessment: JEE for IHR (2005)
 - ✓ Demonstrated capacity – AMR detection
 - ✓ Developed capacity – IPC & AMR surveillance caused by AMR pathogens
 - ✓ Limited capacity – Antimicrobial stewardship
- 2019: Global Health Security Index
 - ✓ Ranked 22nd on AMR management
- 2022: Second assessment: JEE for IHR (2005)



Lessons learnt

- Elevating AMR to high-level visibility and establishing the national governance mechanism should be done at an early stage.
- Pace of implementation varies across organizations.
 - AMR prioritization against other issues; perceived relevancy and ownership
 - Ability to convene multi-partner collaboration and embed NSP-AMR into their workflow
- Investment in building the M&E platform should go in parallel with implementation.
 - Data fragmentation is a key challenge!
- Goals that are ambitious, but measurable, can advance action beyond expectations.

Challenges

- Political commitment during the implementation phase seems to be weaker than that in an initial phase.
- Government budget is available but fluctuated on a yearly basis.
 - The WHO CCS-AMR program (2017-2021) will end this year.
- Governance mechanism is needed to redesign.
 - Vertical and horizontal mechanism
- COVID-19 pandemic creates mixed effects.
- Fragmentation of data and databases impedes an advancement on AMR/AMU surveillance.
- Global policy coherence is needed to support country's action.

Conclusion

- Aligned with global and regional actions:
 - **Policies:** GAP-AMR, FAO action plan on AMR, OIE strategy on AMR, etc.
 - **Political declarations:** UNGA political declaration on AMR, ASEAN declarations on AMR, etc.
 - **International regulations/standards:** International Health Regulations, CODEX etc.
- Addressing key shortcomings in the past (prior to the plan)
 - Consolidating actions across sectors
 - National governance mechanism
 - Strong multi-sectoral collaboration under the One Health approach
 - Building, harmonizing and sustaining infrastructure (esp. M&E and surveillance) at the national level
 - To prevent dispersed governance of data
 - To minimize workload at facility levels (hospitals, farms, pharmacies etc.)
 - Generating relevant evidence to support an effective implementation
- The ways forward
 - The 2nd NAP-AMR (2023-2027)