

Development of Surveillance of Antimicrobial Consumption in Thailand

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Background

The Global Action Plan on AMR calls on countries to strengthen surveillance. The 2016 Political Declaration on AMR suggests establishment of monitoring systems for AMR and use of antimicrobials to inform policies.

Objectives

To synthesize experiences on methodological and process of development of Thailand Surveillance of Antimicrobial Consumption (Thailand SAC).

Methods

Reviews of European countries' experience on ESAC-Net [1] and ESVAC [2], the scope of antimicrobials to be covered in human [3] and animal [4], experiences on the development of National Drug Account [5] were conducted by a multi-stakeholder working group to develop Thailand SAC.

Findings

Four major actions for the development of Thailand SAC (Fig.1):

I. Learning from international experiences

Reviews international experiences found useful, particular on the European Surveillance of Antimicrobial Consumption Network (ESAC-Net) and the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC). The methodology is also in line with a guidance of WHO and OIE.

II. Understanding the distribution chains of antibiotics, legal framework and reporting system

The system analysis on antibiotic distribution channels was conducted. Two laws govern the distribution of antimicrobials for humans and animals; the 1967 Drug Act responsible by Thai Food and Drug Administration (Thai-FDA) and the 2015 Animal Feed Quality Control Act, responsible by Department of Livestock Development.

The Drug Act BE2530 (1987) mandates all pharmaceutical importers and manufacturers to report annual volume and value to Thai-FDA of all medicines including antibiotics.

III. Designing and developing SAC

a. Inclusion of ATC/DDD systems into all registered medicine held by Thai-FDA

All antimicrobials must have Anatomical Therapeutic Chemical Classification System (ATC Code) for the conversion of any consumption units into Defined Daily Dose (DDD) [6].

b. The scope

SAC covers core set and optional list of antimicrobials in human, and in animal, see Table 1.

Table 1 Scope of human and animal antimicrobial covered by Thai SAC

A. human antimicrobial	ATC Code
I. Core set	
• Antibacterials	J01
• Antibiotics for alimentary tract	A07AA
• Nitroimidazole derivatives for protozoal diseases	P01AB
II. Optional List	
• Antifungals	J02
• Antimycotics	D01BA
• Antivirals	J05
• Antimycobacterials for treatment of tuberculosis	J04A
• Antimalarials	P01B
B. Antimicrobial used in animal	ATC Vet Code
• Antimicrobial agents for intestinal use	QA07AA; QA07AB
• Antimicrobial agents for intrauterine use	QG01AA; QG01AE; QG01BA; QG01BE; QG51AA; QG51AG
• Antimicrobial agents for systemic use	QJ01
• Antimicrobial agents for intramammary use	QJ51
• Antimicrobial agents used as antiparasitic agents	QP51AG

c. Data source and management

A software program was developed to support e-submission by distributional channel for human (hospital, primary care and retail sector) and by food animal species, and DDD conversion.

The mid-year population reported by Ministry of Interior is used as reference for estimate DDD per 1000 population per day. There is no Population Correcting Unit (PCU) specific for Thailand, the PCU table used by ESVAC is used to facilitate international comparison [7]. By middle of 2018, Thailand SAC will generate baseline consumption data for 2014-2017.

d. Methodological challenges

Data quality in the annual report can be improved by data quality audit of its adequacy and accuracy. A feed back report on market share of each medicine group to those who report will improve quality of data.

SAC cannot disaggregate by clinical conditions, age and gender of patients; this limitation can be rectified by future use of insurance fund reimbursement data, or point prevalence survey in clinical settings.

IV. Building ownership and trust-based working group

The working groups of multi-sectoral, multi-disciplinary researchers was established, consisting researchers and key stakeholders in particular Thai Food and Drug Administration, Department of Livestock Development and universities. Four streams of work had fully applied trust -base working relation across different stakeholders with mutual respect. The work focuses on team building through empowering so that all partners grow up together in a non-exploitative manner. Full engagement, ownership will ensure commitment and long-term sustainability.

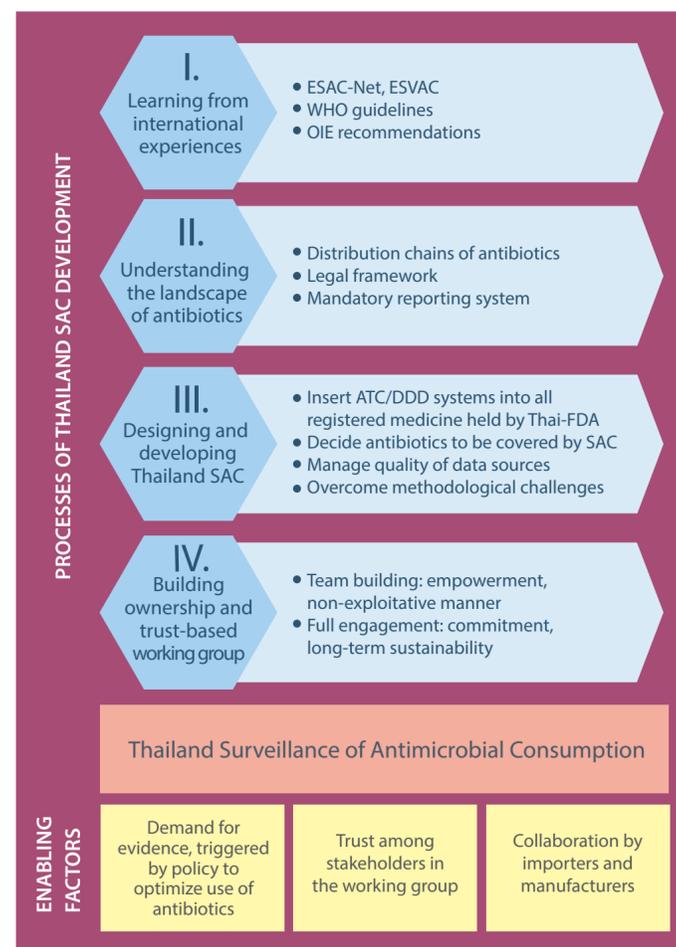


Figure 1. Four major actions for the development of Thailand SAC and enabling factors

Discussion

Three enabling factors support successful Thailand SAC development. First, demand for evidence is triggered by policy to optimize use of antibiotics by 20% and 30% in humans and animals by 2021; Thailand SAC contributes to such monitoring. Second, trust among stakeholders in the working group had gradually built and sustained through engagement; it fosters ownership and commitment to develop and use for policy actions. Finally, the collaboration by importers and manufacturers is boosted by the feedback report on their market share, though they cannot see other competitors.

Thai FDA, having fully involved in the development, ensures commitment to sustain the SAC. Sustainability of SAC depends on quality reporting system, effective communication with the industry, user friendly electronic submission and safeguard confidentiality.

Conclusions

The technical dimension guided by international experiences is equally important as the process of stakeholders' engagement. The collaboration by pharmaceutical industry is critical to ensure quality report.

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