



The Global Health Priority of
Antimicrobial Resistance
and the
Role of International Development
in Southeast Asia

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AIDF Asia Summit
Bangkok, 20 June 2018



Antibi
alar

Global inc
antibi

CBSN

Change in DDEs per
100mg intravenous per
day (2000-2015)

2014
2015
2016

WARNS OF ANTIBIOTIC RESISTANCE
AL FINDS INCREASED USAGE AROUND THE GLOBE

CBS NEWS March 26, 2018, 6:45 PM

CRISIS!

AMR public health crisis: it's time
e converted

Antibiotic Resistance | Analysis & Opinion

SUPERBUGS!

ANTIBIOTIC APOCALYPSE THAT'S
BACK TO THE DARK AGES

at Us

Global use of antibiotics
boars as resistance
worsens

Global perspective
Human stories

TOPICS IN DEPTH

SECRETARY-GENERAL
ICYMI

Antibiotic resistance is 'crisis we cannot ignore,' UN warns, calling for
responsible use of these medicines

HEALTH September 21, 2017 1:27 pm

'Global health emergency
out of antibiotics, the

Use Antibiotics
Public Health
Horizon

by Shanthu Shantharam Jun 01, 2018, 11:4

running

ER

under even the most
deadly, warns chief

veruse of

HOM

ion | Health | Brexit | Royals |

A map of Southeast Asia with a red pin marking Pailin, Cambodia. The map shows various countries including India, Bangladesh, Myanmar, Thailand, Vietnam, Philippines, Malaysia, and Singapore. Major cities like Bangkok, Hanoi, and Manila are labeled. The text is overlaid on a semi-transparent dark blue rectangle.

“[Pailin, Cambodia] lies at the heart of a region that has seen successive waves of resistance to malaria drugs arise in local people and then spread across the globe. The resulting death tolls can be measured in millions of lives...”

Guardian, 8 April 2018

Southeast Asia is a hotbed of antimicrobial resistance, especially antimalarials

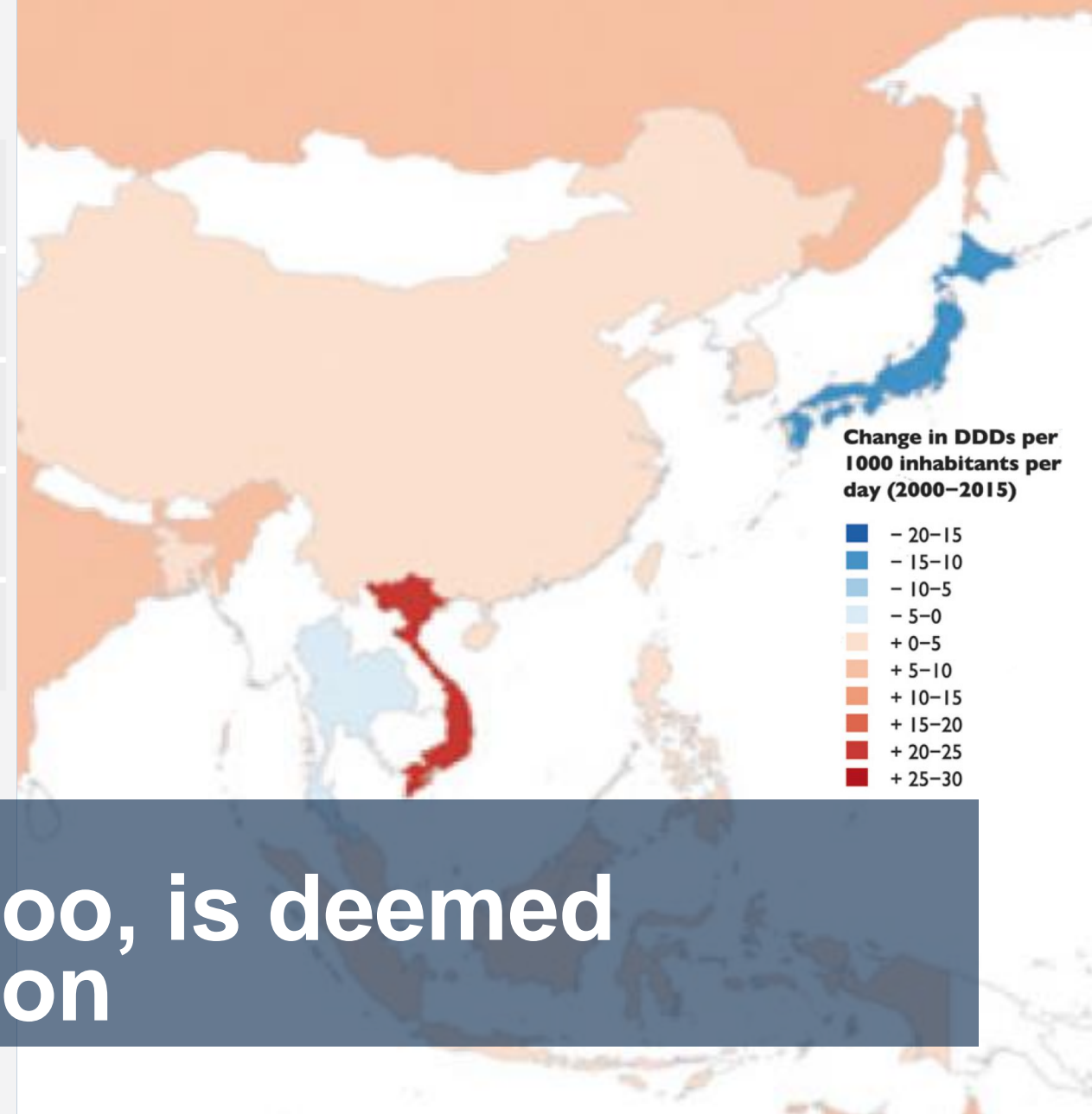
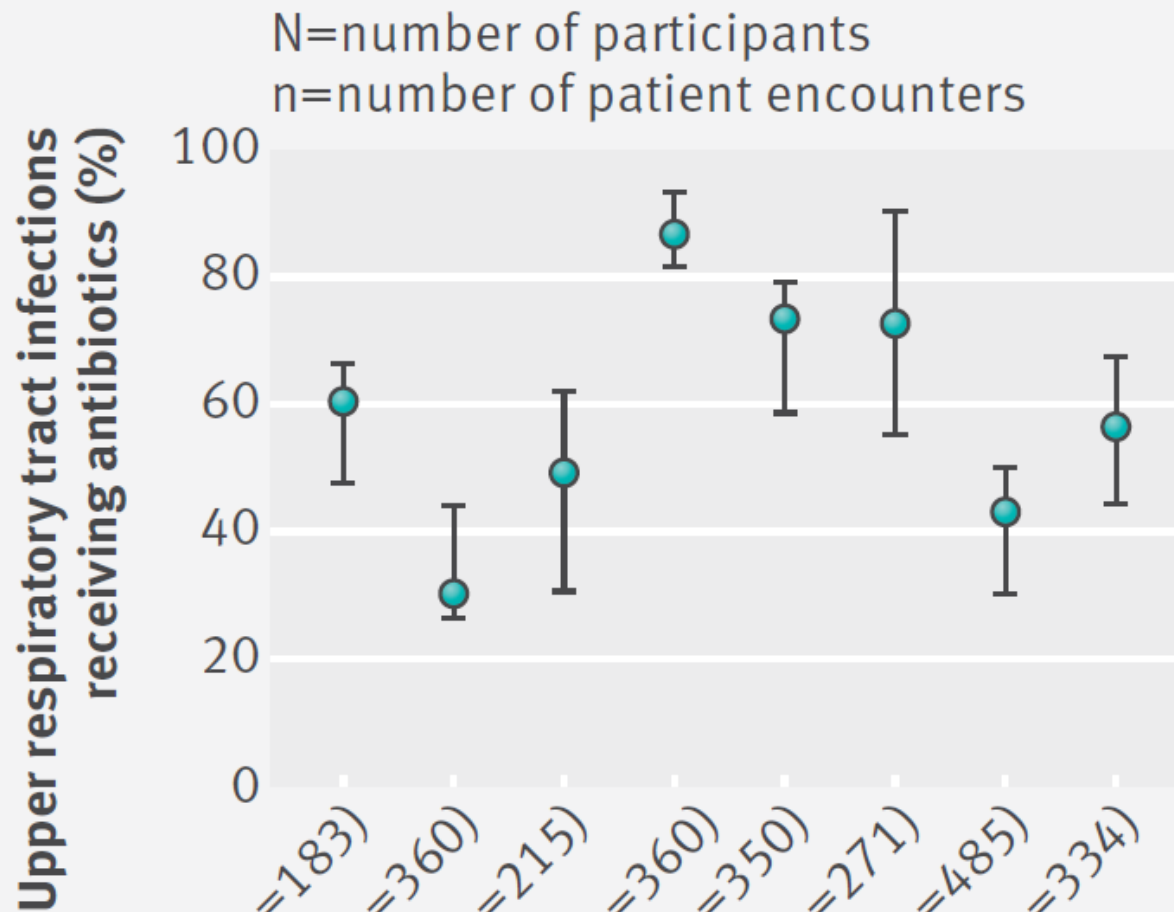


Google Maps

<https://www.theguardian.com/world/2018/apr/08/cambodian-town-breeds-resistance-malaria-drugs>

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Antibiotic resistance, too, is deemed problematic in the region



Holloway, K. A., Batmanabane, G., Puri, M., & Tisocki, K. (2017). Antibiotic use in South East Asia and policies to promote appropriate use: reports from country situational analyses. *BMJ*, 358(Suppl1). doi: 10.1136/bmj.j2291

Klein, E. Y., Van Boeckel, T. P., Martinez, E. M., Pant, S., Gandra, S., Levin, S. A., *et al.* (2018). Global increase and geographic convergence in antibiotic consumption between 2000 and 2015 [epub ahead of print]. *Proceedings of the National Academy of Sciences*. doi: 10.1073/pnas.1717295115



How Antibiotic Resistance Happens

1.
Lots of germs.
A few are drug resistant.



2.
Antibiotics kill
bacteria causing the illness,
as well as good bacteria
protecting the body from
infection.



3.
The drug-resistant
bacteria are now allowed to
grow and take over.



4.
Some bacteria give
their drug-resistance to
other bacteria, causing
more problems.



**Resistance is an evolutionary response,
accelerated by excessive medicine use**

“Economic costs of AMR may be as severe as during the [2008] Financial Crisis”

World Bank

“Unless action is taken, the burden of deaths from AMR could balloon to 10 million lives each year by 2050”

The Review on Antimicrobial Resistance

The impact of AMR could be severe, affecting the poorest countries worst



World Bank. (2017). *Drug-resistant infections: a threat to our economic future*. Washington, DC: Author.
Photo: Tales of Treatment; Photo credit: Patthanan Thavethanutthanawin

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Supply	Demand
<p>A Global Innovation Fund for early-stage, non-commercial R&D</p> <p>Better incentives to promote investment for new drugs and improving existing ones</p> <p>Build a global coalition for real action – via the G20 and the UN</p>	<p>Undertake a massive global public awareness campaign</p> <p>Improve hygiene and prevent the spread of infection</p> <p>Reduce unnecessary use of antimicrobials in agriculture and their dissemination into the environment</p> <p>Improve global surveillance of drug resistance and antimicrobial consumption in humans and animals</p> <p>Promote new, rapid diagnostics</p> <p>Promote development and use of vaccines and alternatives</p> <p>Improve the numbers/pay/recognition of people working in infectious disease</p>

Policy ideas exist to fight the drivers of AMR

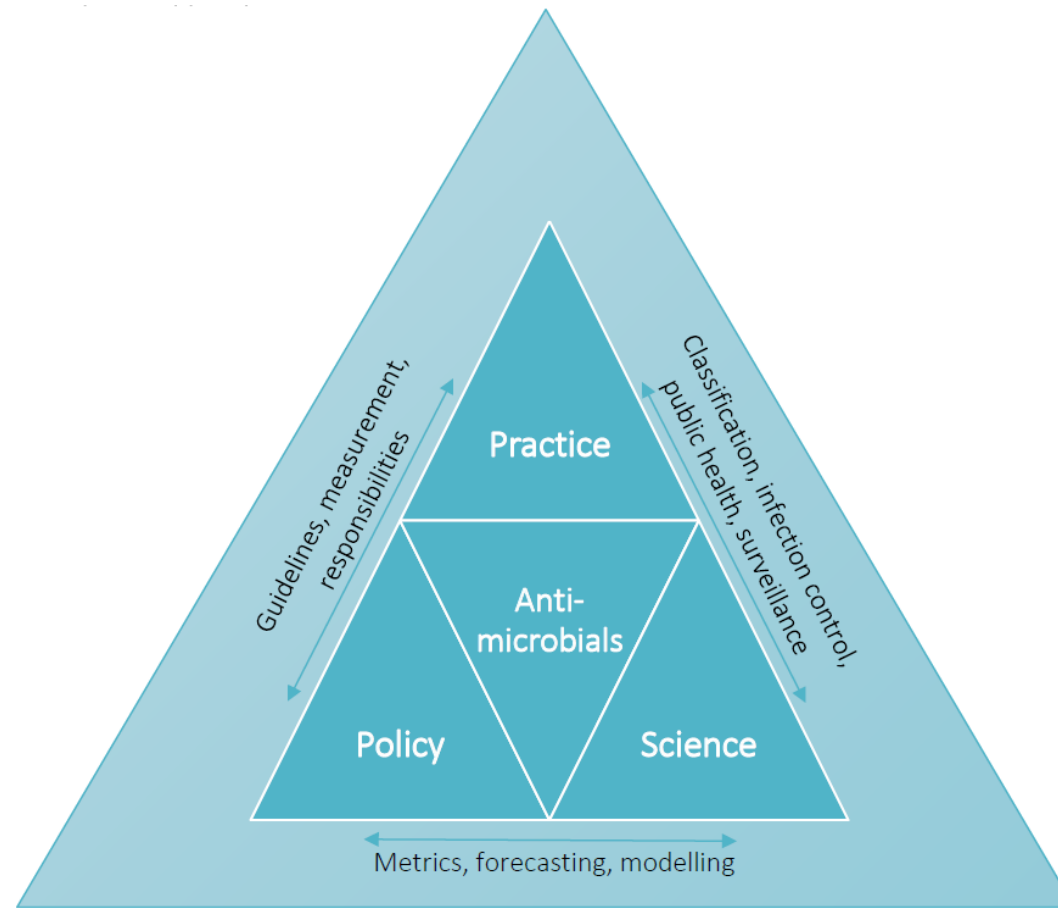


The Review on Antimicrobial Resistance. (2014). *Antimicrobial resistance: tackling a crisis for the health and wealth of nations*. London: The UK Prime Minister.

Photo: Tales of Treatment; Photo credit: Patthanan Thavethanutthanawin

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**However (1):
Medical policy focus neglects social context**



AMR practice, policy and science domains and their inter-relations
Chandler, C. I. R., Hutchinson, E., & Hutchison, C. (2016). *Addressing antimicrobial resistance through social theory: an anthropologically oriented report*. London: London School of Hygiene & Tropical Medicine.

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Chiang Rai (Thailand)

Salavan (Laos)

Chiang Rai (Thailand)			Salavan (Laos)		
Antibiotic	Antibiotic	Anti-inflammatory medicine	Antibiotic	Anti-inflammatory medicine	Germ killer
Anti-inflammatory medicine			Anti-inflammatory medicine		
Germ killer			Germ killer		
"Ampi" (Ampicillin)			"Ampi" (Ampicillin)		
"Amoxi" / "Amok" / "Moxi" etc. (Amoxicillin)			"Amoxi" / "Amok" / "Moxi" etc. (Amoxicillin)		
"Tetra" (Tetracycline)			"Tetra" (Tetracycline)		
"Cloram" / "Colem" / "Gulolam" etc. (Chloramphenicol)			"Cloram" / "Colem" / "Gulolam" etc. (Chloramphenicol)		
"Sepasin" (Cephalexin)			"Sepasin" (Cephalexin)		
"Peni" (Penicillin)			"Peni" (Penicillin)		
"Para" (Paracetamol) / Sara / Tiffy / Veracold			"Para" (Paracetamol) / Sara / Tiffy / Veracold		
Pain reliever			Pain reliever		
"Capsule medicine"			"Capsule medicine"		
Other names			Other names		
"Don't know name of this medicine"			"Don't know name of this medicine"		

Impressions from Thailand & Laos: Fragmented local knowledge



Representative survey data from 2,141 rural respondents
Photo: Tales of Treatment; Photo credit: Patthanawin
Thavethanuttanawin

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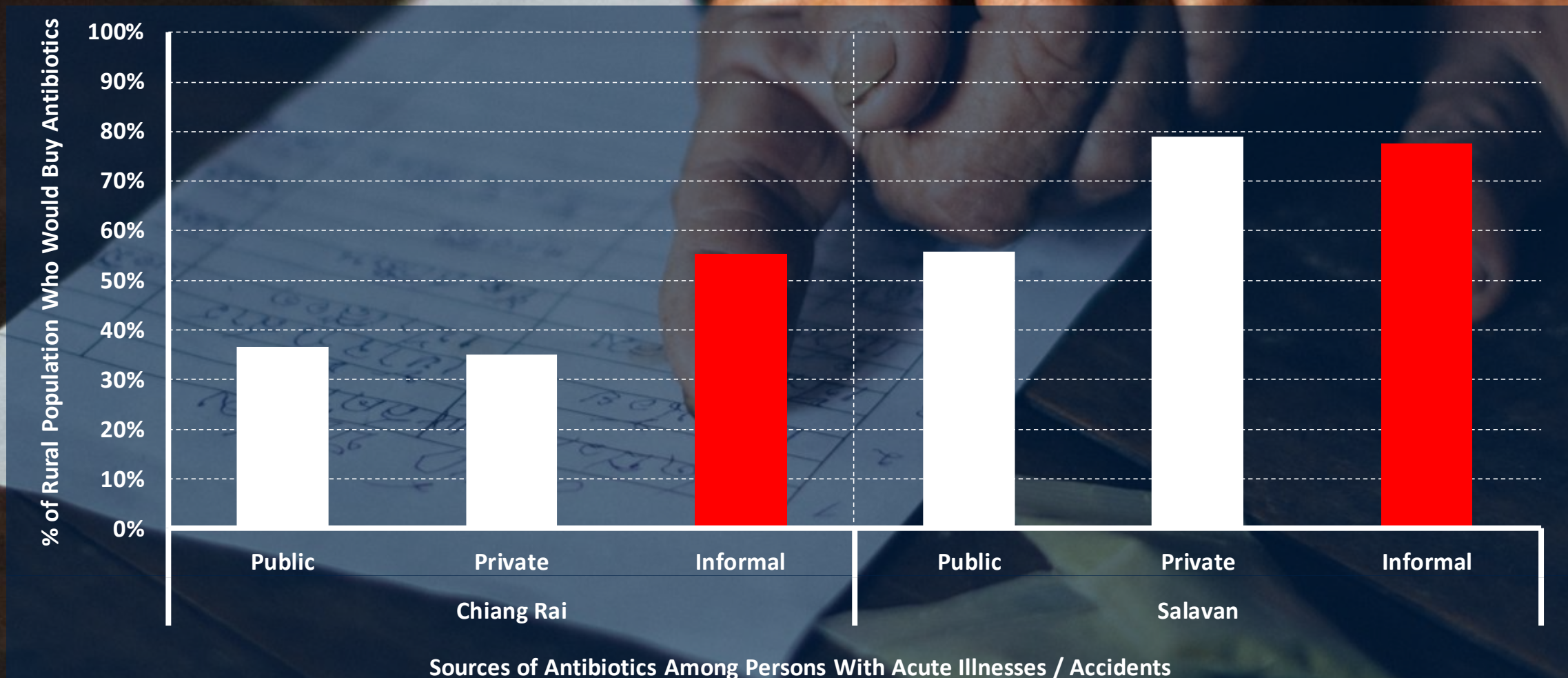
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Representative survey data from 2,141 rural respondents
 Photo: Tales of Treatment; Photo credit: Patthanan
 Thavethanutthanawin

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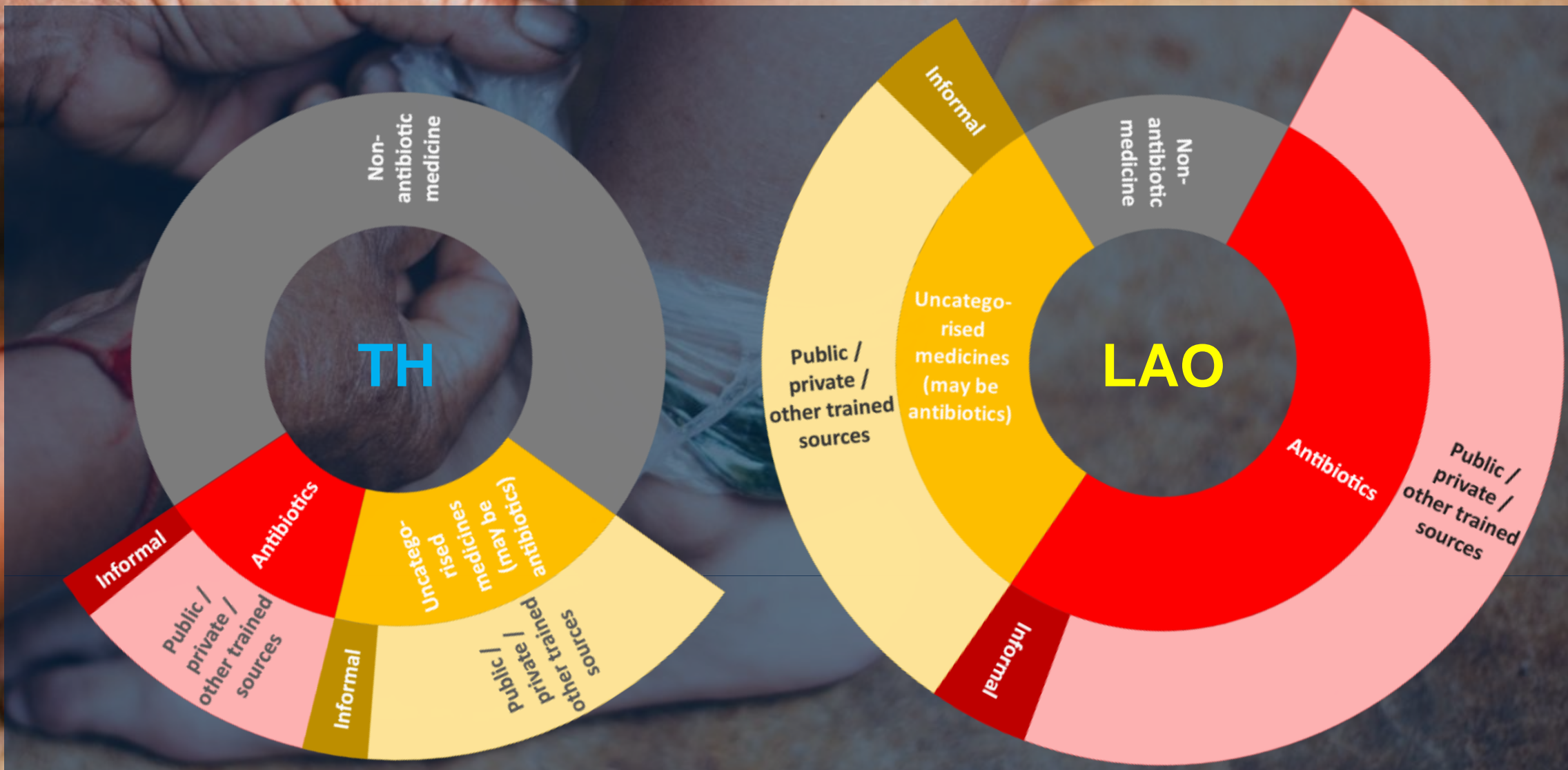
Weak link between knowledge and use



Representative survey data from 2,141 rural respondents
Photo: Tales of Treatment; Photo credit: Patthanawin
Thavethanuttanawin

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Representative survey data from 2,141 rural respondents
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- 
- Language & knowledge are fragmented and embedded in local context
 - Antibiotics are not deemed “miracle pills” but fulfil specific purposes
 - People might not know what medicine they are taking
 - People depend on pharmaceuticals in general, not just antibiotics
 - “Development” has a messy relationship with antibiotic use

Some observations



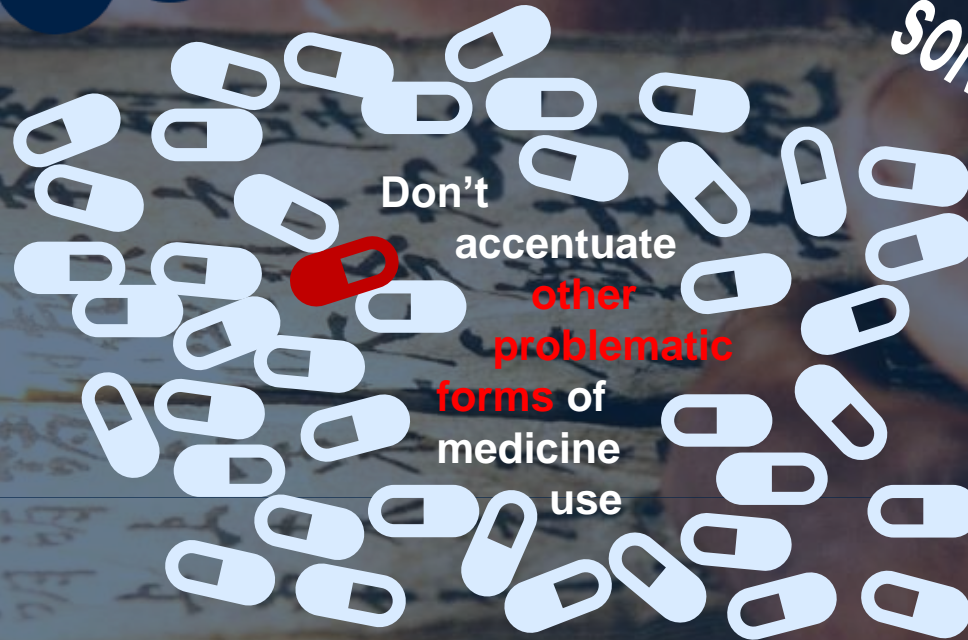
If antimicrobial overuse is a *symptom* of health system deficiencies, hardship, and inequitable development, then development aid can tackle the problem more holistically than health policy alone

- ▶ **Social protection**
- ▶ **Occupational labour laws**
- ▶ **Access to credit**
- ▶ **Agricultural extension**
- ▶ **Hygiene, indoor air pollution**
- ▶ **Community outreach**

Opportunities for development aid



Medical
solutions alone are
insufficient



"Massive" awareness
campaigns will **not**
solve antibiotic use



But we should avoid common pitfalls



Tales of Treatment
Photo credit: Patthanant Thavethanutthanawin

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A close-up photograph of a person's hands using a wooden pestle to grind green herbs on a wooden mortar. The person is wearing a black digital wristwatch. The background is a blurred outdoor setting with reddish-brown soil.

AMR is not a medical but also a **social problem**

It is **not obvious** how AMR works in society, and neither are its solutions

The **development community** has a **crucial role** to broaden the agenda

Conclusion





THANK YOU. QUESTIONS?

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