



**Asia-Pacific
Economic Cooperation**

APEC Expert Forum

Enhancing Health Security –
International campaign program to control
antimicrobial resistance in the Asia-Pacific

APEC Health Working Group

9 November 2013

Lotte Hotel World, Seoul, Korea



APEC Project S HWG 02 12A

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WELCOME REMARKS

Good morning, ladies and gentlemen!

As Director of Korea Centers for Disease Control and Prevention, it is my great pleasure to invite experts on infectious diseases and antimicrobial resistance in the Asia-Pacific region to the APEC Expert Forum on international campaign program to control antimicrobial resistance in the Asia-Pacific.

As you are well aware, antimicrobial resistance is a very serious public health issue worldwide, especially in the Asian region. Given the current situation of antimicrobial resistance in the region, more comprehensive strategies should be prepared urgently. Korea has also serious challenges of antimicrobial resistance in major bacterial pathogens. Since a few years ago, the Ministry of Health and Welfare of Korea and Korea CDC have been organizing and supporting the efforts to reverse the tide of emerging resistance. We are sure that more effective collaborations between academia, public health system, and international organizations as well as between countries are critically required to control and prevent the emergence and spread of antimicrobial resistance in the region.

In this context, this APEC project and the APEC Expert Forum to prepare the international campaign program to increase awareness of antimicrobial resistance and to promote appropriate antibiotic use is very important for control of resistance in the Asia-Pacific region. I hope that we can have opportunities for creating multi-level, well-coordinated solutions to this complex and urgent problems of resistant pathogens through this APEC Expert Forum.

Finally, I extend you a warm welcome to Seoul, Korea and wish you all a successful forum and an enjoyable stay in Korea.

Thank you very much.



Byung-Guk Yang, MD, PhD

Director
Korea Centers for Disease Control and Prevention (KCDC)
Ministry of Health & Welfare
Korea


OPENING REMARKS

I would like to welcome all of you to the APEC Expert Forum to discuss the “International campaign program to control antimicrobial resistance in the Asia-Pacific”.

As we are well aware, infectious diseases still remain the major threat to public health in the world. Disease burden of infectious diseases is amplified by the emergence and the spread of antimicrobial resistance (AMR) among major pathogens. Given the growing global crisis of AMR, particularly in the Asia-Pacific region, APEC has been supporting the international projects to set up the future strategies to control and prevent AMR in the region since 2010. The first project entitled “International initiatives to control AMR in the Asia-Pacific region” was successfully performed with development of the first international strategic action plans to control and prevent AMR in the Asian region in 2010-2011. Among the strategic action plans to control AMR developed by the first project, the most basic and essential strategy is to increase the awareness of AMR and promote appropriate use of antibiotics through educational and campaign activities. However, unfortunately, there have been no effective campaign programs to control and prevent AMR in the Asian region to date. Therefore, consecutive project entitled “Enhancing health security – International campaign program to control antimicrobial resistance in the Asia-Pacific” was approved by APEC in 2012.

At the APEC Expert Forum, expertise and experience of experts from APEC economies will be shared. Also, we will have interactive discussion on the planning, strategies, and contents of the international campaign program to control and prevent AMR and finalize the detailed plan to launch the campaign program. Based on the APEC Expert Forum, we will introduce the first international campaign in the Asian region in 2013-2014. I am certain we will have a very productive discussion today to prepare strategies to control AMR in the region.

Once again, I would like to express my gratitude to all of you and I wish you an enjoyable stay in Korea. Thank you very much.



Jae-Hoon Song, MD, PhD

Founder & Chairman, Asia Pacific Foundation for Infectious Diseases (APFID)
Organizer, Asian Network for Surveillance of Resistant Pathogens (ANSORP)

President & CEO, Samsung Medical Center
Dean, Sungkyunkwan University School of Medicine
Professor of Medicine, Division of Infectious Diseases

EXECUTIVE SUMMARY

The APEC project S HWG 02 12A on “International campaign program to control and prevent antimicrobial resistance (AMR) in the Asia-Pacific region” was successfully performed by developing an international campaign program coined as “Campaign 4” to increase awareness on AMR and to promote appropriate antibiotic use in the Asia-Pacific region and by organizing the APEC Expert Forum at Lotte Hotel World in Seoul, Korea on 9 November 2013 with 30 experts from 9 APEC economies including China, Indonesia, Korea, Malaysia, Peru, the Philippines, Chinese Taipei, Thailand, and Viet Nam and from non-APEC stakeholder - Western Pacific Regional Office of World Health Organization (WHO). At the APEC Expert Forum, concept, contents and implementation plan of Campaign 4 were discussed and this campaign will be launched in economies in the Asia-Pacific region from early 2014.

Given the growing global crisis of AMR, particularly in the Asia-Pacific region, APEC has been supporting the international projects to set up the future strategies to control and prevent AMR in the region since 2010. The first project entitled “International initiatives to control AMR in the Asia-Pacific region” (HWG 05/2010A) was successfully performed with development of the first international strategic action plans to control and prevent AMR in the Asian region in 2010-2011. Among the strategic action plans to control AMR developed by the first project, the most basic and essential strategy is to increase the awareness of AMR and promote appropriate use of antibiotics through educational and campaign activities. However, unfortunately, there have been no effective campaign programs to control and prevent AMR in the Asian region to date. Therefore, consecutive project entitled “Enhancing health security – International campaign program to control antimicrobial resistance in the Asia-Pacific” was approved by APEC in 2012.

The key objectives of this APEC project were to develop campaign strategies to increase the awareness of AMR and to promote the appropriate use of antibiotics in the Asia-Pacific region, to develop and provide platform contents and materials of campaign program, and to roll out the international campaign program

in APEC economies. For these purposes, therefore, Campaign 4, has been developed for general public and healthcare professionals in the Asia-Pacific region. Campaign 4 will use posters, brochures, leaflets, e-learning program, website, video clips as well as educational programs. At the APEC Expert Forum which was held in Seoul, Korea on 9 November 2013, experts from APEC economies have shared their expertise and opinions. Based on the discussion at APEC Expert Forum, the first international campaign on AMR in the Asia-Pacific region, Campaign 4, will be implemented in APEC economies from early 2014.

Through all the efforts and international collaborations endorsed by APEC since 2010, our final goals have been persistently pursued to prevent and control AMR in the Asia-Pacific region and to strengthen APEC's capacity to respond to public health threat caused by AMR in APEC economies. We are sure that the collaboration between APFID and APEC, and also WHO on the Campaign 4 can contribute to achieve our goal in the region. Also, this project will contribute to enhance the preparedness against AMR in APEC economies, resulting in enhanced human security in APEC economies.

1. INTRODUCTION

Treatment of infectious diseases is becoming more difficult due to the widespread emergence of antimicrobial resistance (AMR) in major pathogens, which makes antibiotics ineffective and threatens public health and human security. AMR is obviously one of the most critical emerging infections with devastating impact on mortality. AMR also has a serious impact on economy due to huge increase in healthcare cost for treatment of infections caused by resistant pathogens, which is estimated to be \$ 30 billion per year in the United States, and damages international trade both directly and indirectly.

Effective control and prevention of AMR can be achieved only by multifaceted international collaborations based on strong national and international initiatives because AMR can spread across borders. For this reason, APEC has supported an international project entitled “International initiatives to control antimicrobial resistance in the Asia-Pacific region” (HWG 05/2010A) in 2010, which was successfully performed with the development of strategic action plan. The strategic action plans to control AMR in the Asian region consist of six major pillars including surveillance of AMR and antibiotic use to identify the problem of AMR in the

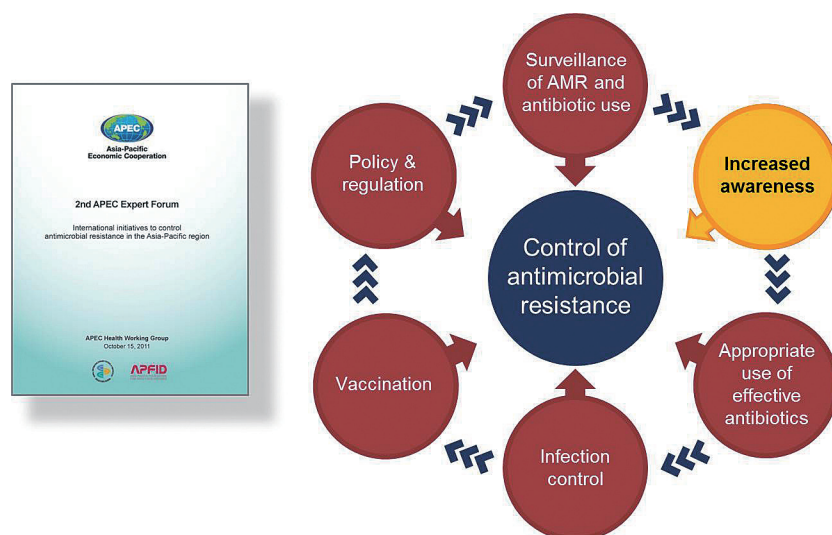


Figure 1. Strategic action plan to control and prevent antimicrobial resistance developed by the APEC project entitled “International initiatives to control antimicrobial resistance in the Asia-Pacific region” (HWG 05/2010A) in 2010-2011

region, increase of awareness on AMR, appropriate use of effective antibiotics to prevent the emergence of AMR, hospital infection control to prevent the spread of resistance, effective vaccination to prevent the occurrence of specific infections, and finally relevant policies and regulations to control antibiotic use and to prevent AMR (Figure 1).

Among various important strategies to control and prevent AMR, the most basic and essential strategy is to increase the awareness of AMR and promote appropriate antibiotic use in APEC economies through educational and campaign activities. Educational and campaign programs are most effectively implemented through public-private partnership. Given the international spread of AMR, sharing of the campaign programs by APEC economies is also very important. Despite the serious situation of AMR in the region, however, this is still a neglected issue and there have been no adequate educational and campaign activities for this issue in many APEC economies, particularly developing economies. Lack of awareness of critical problems of AMR prevents APEC economies to prepare comprehensive strategies to control and prevent the emergence and spread of AMR in the region.

Therefore, this APEC project was aimed to set out to implement an international campaign program to increase the awareness of AMR as well as to promote the appropriate use of antibiotics in the region. The long-term goal of the project was to control and prevent AMR in the AP region based on strategic action plans including increased awareness of AMR, appropriate antibiotic use, infection control, vaccination, and relevant policies and regulations. And, the key objectives of the project were to develop campaign strategies to increase the awareness of AMR and to promote the appropriate use of antibiotics in the AP region, to develop and provide platform contents and materials of campaign program, and to set out to implement the international campaign program in APEC economies. This project will contribute to enhance the preparedness against AMR in APEC economies, resulting in enhanced human security in APEC economies.

2. DEVELOPMENT OF INTERNATIONAL CAMPAIGN PROGRAM

Since AMR emerges due to multiple complex reasons and spreads internationally, future strategies to control and prevent AMR in the region should be based on multi-sectoral and international collaboration. Therefore, campaign for the control and prevention of AMR should be performed through international collaboration and sharing of the campaign programs by APEC economies is also very important.

2.1. Concept and vision of the international campaign program

The international campaign program, Campaign 4, has been developed with consideration of various issues and possible risks in each economy in the region (Figure 2). The Campaign 4, is an international campaign program to increase the awareness of AMR in major pathogens and to promote the appropriate use of effective antibiotics in general public and healthcare professionals in the Asian region.

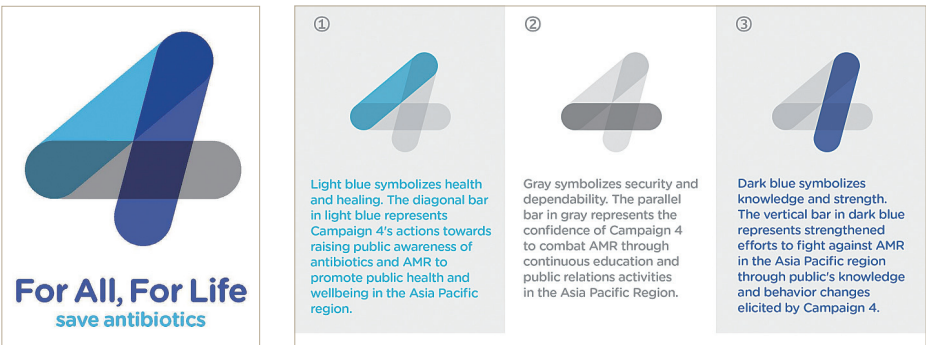


Figure 2. International campaign program, Campaign 4, to increase the awareness of antimicrobial resistance in major pathogens and to promote the appropriate use of effective antibiotics in general public and healthcare professionals in the Asia-Pacific region

The number 4 stands for providing ‘four’ major messages to ‘four’ major target groups and it is a homonym of ‘for’ as well, which indicates “For all, For life”. It is also a homonym of death in some Asian languages such as Chinese, that can stimulate the public’s attention to serious impact of AMR.

Vision : Providing Asia's solutions to AMR

Mission : Campaign 4 contributes to prevent and control AMR in the Asia-Pacific region through increasing awareness of AMR and to promote appropriate antibiotic use.

Objectives : We define our objectives with the **M.A.P.**


- **Multifaceted**: It is a multifaceted, strategic campaign designed specifically to address the rising risk of AMR in the Asia-Pacific region.
- **Action**: It will work to drive action in response to the AMR threat in an effort to save lives with rising awareness of AMR related issues (education, research).
- **Partnership**: Working alongside healthcare providers and policymakers, the campaign aims to galvanize action at the private and public levels to prevent and address AMR in the Asia-Pacific region.

Campaign 4 focuses on overcoming the shortcomings of existing explanation focused “antimicrobial resistance campaign” model which lacks public sympathy by motivating public participation and raising awareness through symbols and simplicity.

2.2. Contents and materials of the international campaign program

After development of campaign concept, messages, platform contents and materials of the campaign program have been developed together with experts from APEC economies and non-APEC stakeholders. We have already organized the Strategic Focus Group (SFG), which is the first international group consisting of 35 multi-sectoral experts on infectious diseases, microbiology, veterinary medicine, and pharmacy from private and government sectors in 11 APEC economies including Korea, China, Hong Kong, China, Indonesia, Japan, Malaysia, the Philippines, Singapore, Chinese Taipei, Thailand, and Viet Nam, for preparing strategic plans to control and prevent AMR in the Asia-Pacific region in our previous APEC project entitled “International initiatives to control antimicrobial resistance in the Asia-Pacific region” (HWG 05/2010A). Therefore,

members of the SFG have worked together to develop platform contents and materials of the campaign program as well as development of campaign strategy.



Facts about Antibiotics and AMR

- Antibiotics are life-saving drugs .
- Inappropriate use of antibiotics leads to drug resistance.
- The pipeline for new tools to combat drug resistance is drying up.
- AMR is continuously spreading and increasing unless strong and relevant actions are implemented.



Main Messages

- No antibiotics without prescription
- No left-over antibiotics
- No antibiotics for common cold
- No antibiotics with inappropriate dose & duration



Major Targets

- General public and patients
- Healthcare professionals
- Pharmaceutical industry
- Policy-makers and planners

* Four main messages might be modified based on the opinions from APEC Expert Forum

Campaign toolkit such as posters, brochures, leaflets, e-learning program, website, video clips, etc. has been developed for Campaign 4. To encourage people living in multilingual economies in the Asia-Pacific region to participate in the campaign activities, the contents of all materials will be translated into local languages and

will be available in multiple channels such as web, mobile, social and print media when the campaign is implemented in economies in the Asia-Pacific region. The target population for the Campaign 4 includes parents of young children, school nurses, students, healthcare professionals, and patient & guardians.

Website of the campaign 4 (www.campaign4.org) for both computer and mobile devices and the contents to increase awareness of AMR and to promote appropriate antibiotic use have been developed (Figure 3). To increase the awareness of AMR, it describes the critical situation of AMR, particularly in the Asian region. And, to promote appropriate antibiotic use, it provides detailed action plan.

Also, all the contents will be translated into local languages and there will be variations in contents based on the local situations when the campaign is implemented in economies in the Asia-Pacific region.

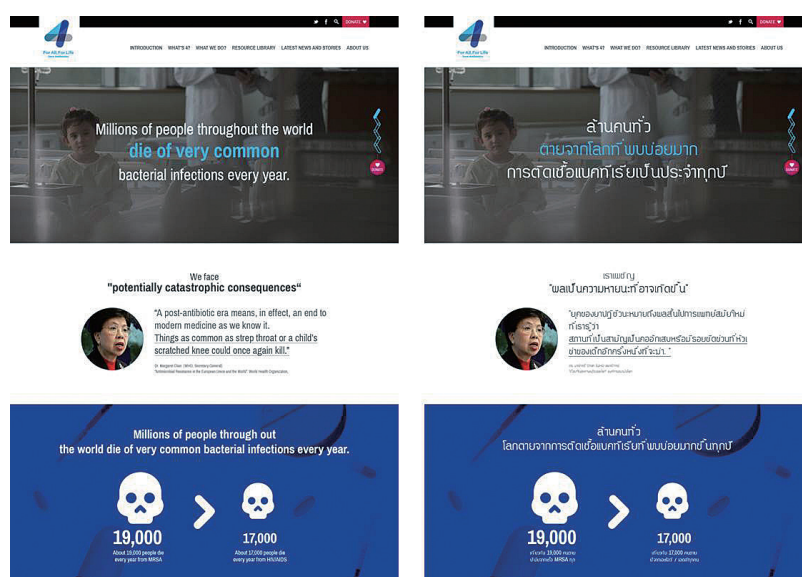


Figure 3. Front page of website of international campaign program, Campaign 4 (left, English; right, an example which is translated into local language, Thai)

Leaflets developed for Campaign 4 describe the critical situation of AMR and importance of appropriate antibiotic use for prevention of AMR (Figure 4).



Figure 4. One of leaflets developed for international campaign program, Campaign 4

We have also developed e-learning program which may be used to educate children and parents (Figure 5). A total running time of e-learning program is 13 min and it consists of three episodes including antibiotics are not a cure-all, appropriate use of antibiotics is the most important, and prevention of AMR starts with basic tips. At the end of every episode, there is a quiz with commentary. So, through this e-learning program, people can learn about appropriate antibiotic use and what to do to prevent AMR. This e-learning program will be available on website and be watched using mobile devices as well. It will be also translated into local languages.



Figure 5. E-learning program for international campaign program, Campaign 4

PR materials for the campaign will be also used to arouse peoples' attention for increasing awareness on AMR and promoting appropriate antibiotic use (Figure 6).

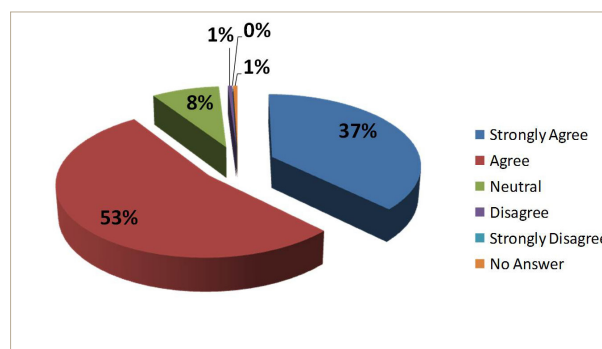


Figure 6. Examples of PR materials for international campaign program, Campaign 4

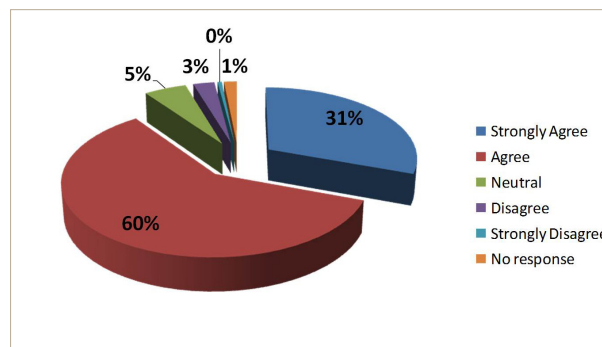
2.3. Survey on the concept of the international campaign program

We had a survey on the concept and messages of Campaign 4 at the APEC Symposium which was held in Kuala Lumpur, Malaysia on 15 Mar 2013 (S HWG 04 12A). A total of 193 participants from 20 APEC and non-APEC economies responded the survey and the results were as follows:

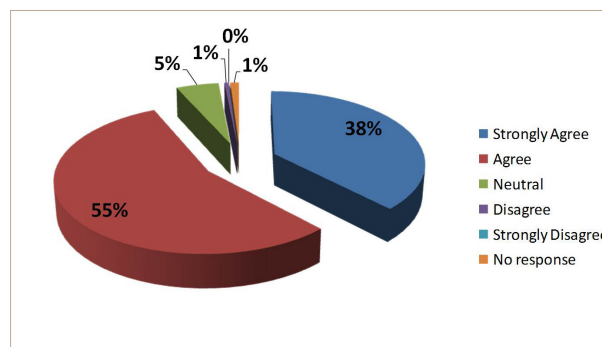
Q1. Do you agree that the title of Campaign (Campaign 4) and its slogan will arouse the curiosity and interest of the general public in your economy?



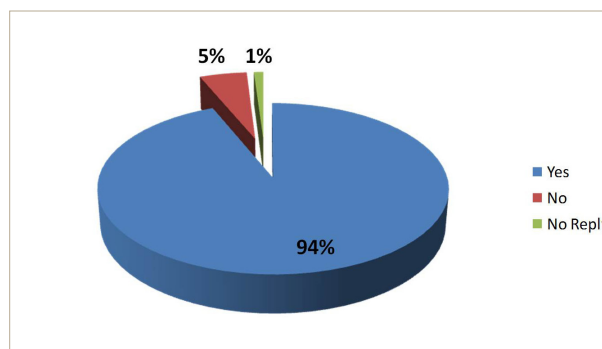
Q2. Do you agree that the title of Campaign (Campaign 4) its slogan will arouse the curiosity and interest of the healthcare professionals in your economy?



Q3. Do you think the Campaign title is easy to remember?

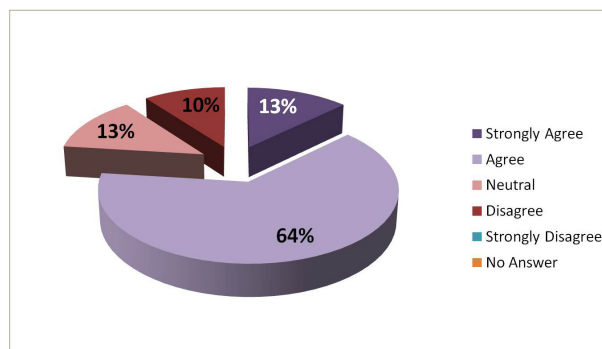


Q4. Are you willing to join our campaign and spread our message to your colleagues?

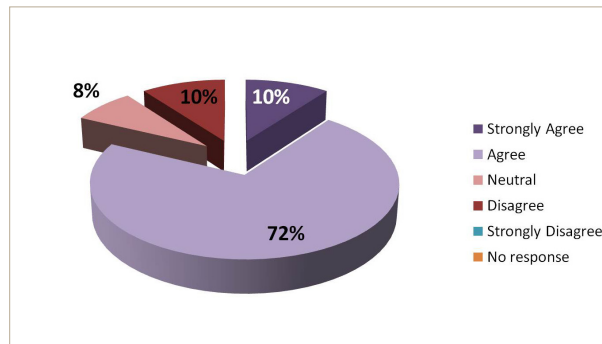


We also had an online survey on the concept and messages of Campaign. A total of 39 members of ANSORP (Asian Network for Surveillance of Resistant Pathogens), which was organized in 1996 and is the first Asian and independent and non-governmental international research network to conduct research on AMR and infectious disease in the Asian region, from 11 APEC economies responded the online survey and the results were as follows:

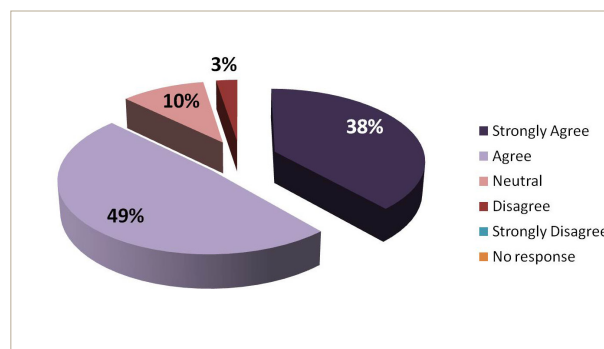
Q1. Do you agree that the title of Campaign (Campaign 4) its slogan will arouse the curiosity and interest of the general public in your economy?



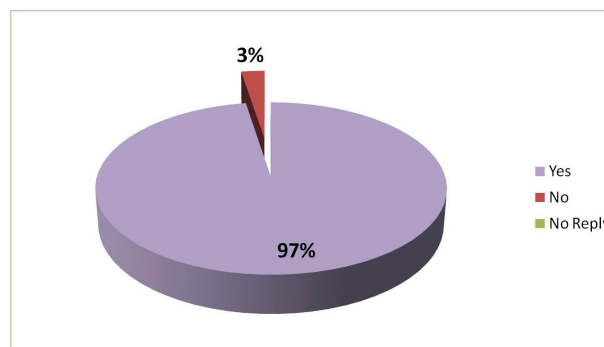
Q2. Do you agree that the title of Campaign (Campaign 4) its slogan will arouse the curiosity and interest of the healthcare professionals in your economy?



Q3. Do you think the Campaign title is easy to remember?



Q4. Are you willing to join our campaign and spread our message to your colleagues?



The survey results suggest that most people who responded in the survey in the Asia-Pacific region think that the title and slogan of the campaign program, Campaign 4, will arouse the curiosity and interest of general public and healthcare professionals in their economies. Also, most people responded that the Campaign title is easy to remember and they are willing to join this campaign.

3. ORGANIZATION OF APEC EXPERT FORUM

After developing the concept and contents of the campaign program, an expert forum was organized to discuss the strategy, contents and implementation plan of the campaign program with invited experts (healthcare professionals and government officials). APEC Expert Forum was held at Lotte Hotel World in Seoul, Korea on 9 November 2013 with about 30 experts from 9 APEC economies including China, Indonesia, Korea, Malaysia, Peru, the Philippines, Chinese Taipei, Thailand, and Viet Nam and from non-APEC stakeholder, World Health Organization (WHO).

At the APEC Expert Forum, Dr. Jae-Hoon Song, the Project Overseer, introduced the background of this project together with brief introduction of previous APEC project (HWG 05/2010A) performed in 2010-2011. And, the concept and contents of the Campaign 4 were introduced. Also, campaign and educational activities in Asian economies was introduced to share the current situation in the region with other participants. So, antibiotic stewardship in China was presented by Dr. Yonghong Xiao at Zhejiang University in China and AMR containment advocacy in Thailand was presented by Dr. Visanu Thamlikitkul at Siriraj Hospital in Thailand. During the APEC Expert Forum, expertise and experience of experts from APEC economies was shared. Also, we had interactive discussion on the planning, strategies, and contents of the international campaign program to control and prevent AMR as follows:

- What do you think about the concept and messages of Campaign 4 considering the situation of your economy and cultural background?
- How is the current awareness on AMR and appropriate use of antibiotics in your economy? Are there any campaign or educational programs in your economy?
- What are the most important requirements for international campaign for awareness on AMR and appropriate use of antibiotics for general public and healthcare professionals?
- What other messages are needed most in your economy for Campaign 4?
- Who is the best stakeholder and what could be the most effective ways to implement Campaign 4 in your economy?
- What is the role of governmental system and private systems such as academic societies or organizations to perform and maintain this kind of campaign program?
- What are the hurdles and barriers to implement Campaign 4 in your economy?



4. IMPLEMENTATION OF INTERNATIONAL CAMPAIGN PROGRAM

Based on the APEC Expert Forum, we will finalize campaign strategy, detailed contents of the program, and planning and the international campaign to increase awareness on AMR and to promote appropriate antibiotic use and the campaign will be introduced in the Asia-Pacific region from early 2014. When implementing the campaign in economies in the Asia-Pacific region, we will build networks and collaborate with appropriate stakeholders in each economy and have multichannel campaign management. And, educational and campaign activities will be taking place in each economy using the campaign toolkit which will be provided by APFID (Asia Pacific Foundation for Infectious Diseases), which is organizing this campaign and has developed the concept and contents of Campaign 4. The contents of the campaign materials will be translated into local languages. Also, there may be variations in the contents and materials of the Campaign 4 based on the local situation.

The impact of campaign will be evaluated and the campaign will be modified if necessary based on the results of campaign evaluation. The ultimate goal of this campaign program is to decrease AMR after the campaign activities. However, it would be very difficult and will take very long time to see this kind of impact through campaign activities. Therefore, the impact of campaign will be evaluated by assessing the effectiveness of Campaign 4 to increase the awareness of antibiotics and AMR, assessing how well the campaign 4 was implemented by a survey of the target populations, and assessing the changes that has occurred in the target population as a results of Campaign 4 by pre-/post-survey such as changes in knowledge and attitudes towards antibiotics and AMR.

- Formative evaluation

The formative evaluation would assess the effectiveness of the awareness campaign on a sampling of the proposed audiences before the campaign is widely disseminated. It would be conducted through controlled focus groups of diverse audiences.

- Are these messages likely to be effective in increasing awareness and motivating change in the target audiences?
- Are these products and materials effective?
- Are the messages and products culturally sensitive and respectful to diverse groups?

- Process evaluation

The process evaluation would reveal how well the campaign was implemented and whether, or the what degree, specific strategic efforts contributed to the implementation. Process question could be included in a national survey of the target populations to assess where and how they learned the information.

- Number of people attending the workshop/meetings
- How the campaign activities were covered by the media
- Feedback from the participants at the workshop/meetings

- Outcome evaluation

The outcome evaluation would be based on assessing the degree to which the specific project and audience outcomes were successfully achieved. Data could be collected through a pre and post survey of the intended audiences. A baseline survey would measure for the current status of public's knowledge and attitudes to antibiotic use. A similar follow-up survey following a specified period of the campaign would assess change among the intended audiences.

- What is an indication for antibiotics ?
- What is the cause of common cold ?
- Is an antibiotic effective for common cold ?
- Can antibiotics be discontinued if common cold symptoms improve ?
- Did you ask doctors to prescribe antibiotics ?
- Did you self-administer left-over antibiotics ?

The campaign strategy and platform and contents of the campaign program prepared by this project will be shared by all APEC economies to help them acknowledge and implement the campaign for control and prevention of AMR by increased awareness of AMR and appropriate use of antibiotics. So, APFID in collaboration with APEC and WHO will provide all the necessary materials and contents with multichannel campaign management to economies in the Asia-Pacific region for control and prevention of AMR in the region.

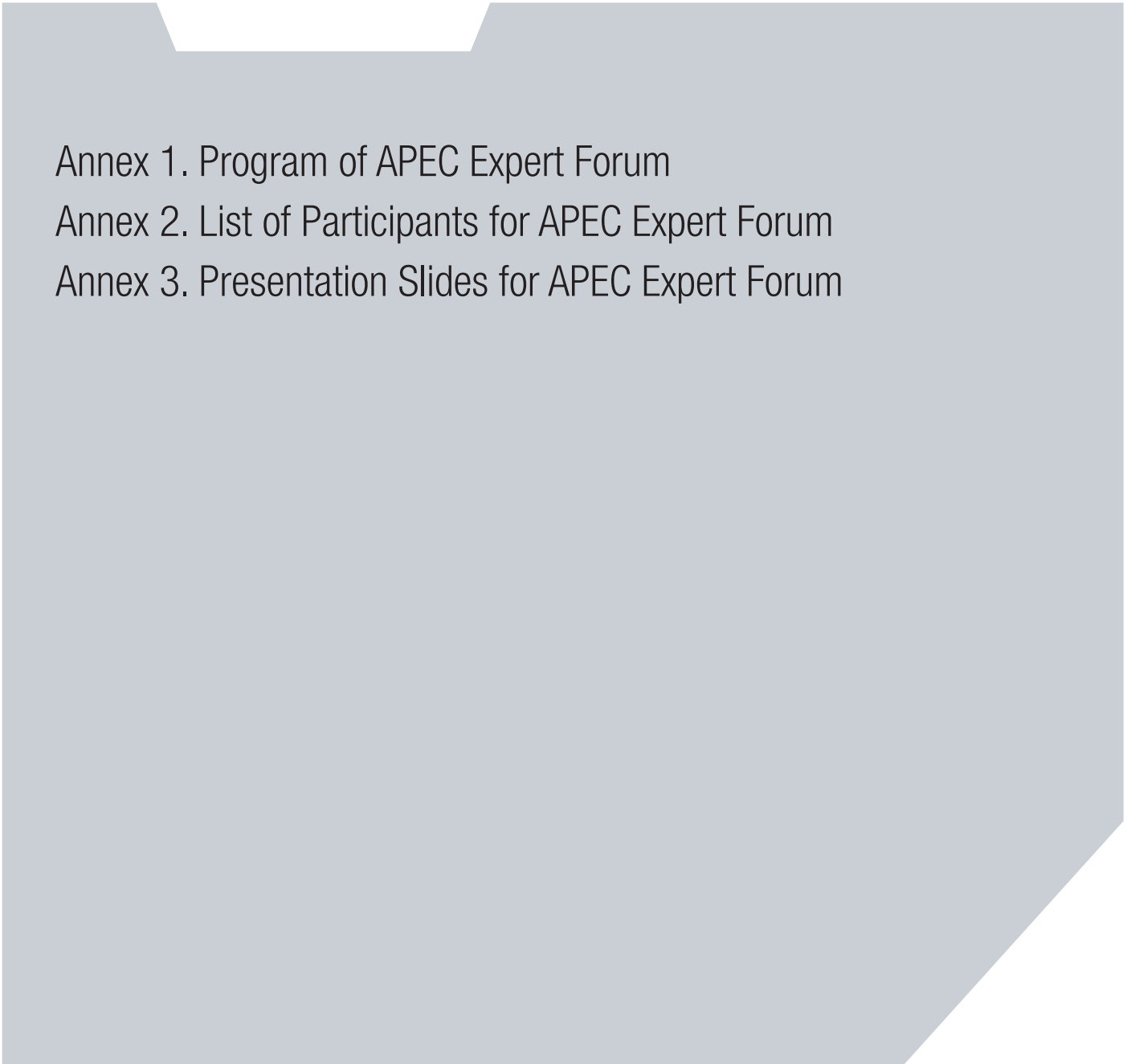


Campaign Toolkit





ATTACHMENTS



Annex 1. Program of APEC Expert Forum

Annex 2. List of Participants for APEC Expert Forum

Annex 3. Presentation Slides for APEC Expert Forum

Annex 1. Program of the APEC Expert Forum held at Lotte Hotel World in Seoul, Korea on 9 November 2013

Registration	07:40 – 08:00
I. Opening remarks	08:00 – 08:05
Dr. Jae-Hoon Song (Project overseer; Samsung Medical Center; APFID, Korea)	
II. Welcome address	08:05 – 08:10
Dr. Byung-Guk Yang (Director, Korea CDC, Korea)	
III. Introduction of APEC projects	08:10 – 08:25
Dr. Jae-Hoon Song (Project overseer, Korea)	
IV. Introduction of international campaign program	
1. Introduction of Campaign 4	08:25 – 08:40
Dr. Cheol-In Kang (Samsung Medical Center, Korea)	
2. Discussion on concept and messages of Campaign 4	08:40 – 09:10
All participants	

V. Campaign & educational activities in Asian economies

1. Antibiotic stewardship in China..... 09:10 – 09:25

Dr. Yonghong Xiao (1st Hospital affiliated to Zhejiang University, China)

2. AMR containment advocacy in Thailand..... 09:25 – 09:40

Dr. Visanu Thamlikitkul (Siriraj Hospital, Thailand)

COFFEE BREAK..... 09:40 – 09:55

VI. Implementation of international campaign program

1. Implementation plan for Campaign 4 in Asia..... 09:55 – 10:10

Dr. So Hyun Kim (APFID, Korea)

2. Discussion on implementation of Campaign 4 in Asia..... 10:10 – 10:40

All participants

VII. Summary & Closing remarks

Future plan of international campaign program..... 10:40 – 11:00

Dr. Jae-Hoon Song (Project overseer, Korea)

LUNCH 11:30 – 13:30

Annex 2. List of Participants for the APEC Expert held at Lotte Hotel World in Seoul, Korea on 9 November 2013

APEC

Mr. Steve Chen

Program Director
APEC Health Working Group (HWG) Secretariat

WHO Western Pacific Region

Dr. Anuj Sharma

Technical Officer / Essential Health Technologies
WHO Regional Office for the Western Pacific

CHINA

Dr. Wenbao Zhang

Division of Medical Service and Nursing
Bureau of Medical Administration and Medical Management
National Health and Family Planning Commission

Dr. Yonghong Xiao

1st Hospital affiliated to Zhejiang University

Dr. Hui Wang

Peking University People's Hospital

INDONESIA

Dr. Wita Nursanthi

Chief
Section Standardization
Sub Directorate Health Referral Services

MALAYSIA

Dr. Norazah Ahmad

Head, Bacteriology Unit
Institute for Medical Research
Ministry of Health

Ms. Rosminah Mohd Din

Deputy Director
Pharmaceutical Services Division
Ministry of Health Malaysia

Dr. Christopher Lee

Head, Medical Department
Hospital Sungai Buloh

PERU

Dr. Coralith Garcia

Instituto de Medicina Tropical Alexander von Humboldt
Universidad Peruana Cayetano Heredia

PHILIPPINES

Dr. Irene Farinas

Medical Officer IV / Chief Designate
Policy, Planning, Program Development and Research Division
National Center for Pharmaceutical Access and Management (NCPAM)
Department of Health (DOH)

CHINESE TAIPEI

Dr. Yung-Ching Liu

Director Taipei Medical University-Shuang Ho Hospital
Ministry of Health and Welfare

THAILAND

Dr. Visanu Thamlikitkul

Division of Infectious Diseases and Tropical Medicine
Faculty of Medicine Siriraj Hospital
Mahidol University

Dr. Pinyo Rattanaumpawan

Division of Infectious Diseases and Tropical Medicine
Faculty of Medicine Siriraj Hospital
Mahidol University

Dr. Adhiratha Boonyasiri

Division of Infectious Diseases and Tropical Medicine
Faculty of Medicine Siriraj Hospital
Mahidol University

VIET NAM

Dr. Cao Hung Thai

Department of Health Examination Ministry of Health

Dr. Doan Mai Phuong

Director
Faculty of Microbiology Bach Mai Hospital

REPUBLIC OF KOREA

Dr. Jae-Hoon Song

Chairman, Asia Pacific Foundation for Infectious Diseases (APFID);
Organizer, Asian Network for Surveillance of Resistant Pathogens
(ANSORP);
President & CEO, Samsung Medical Center;
Dean, Sungkyunkwan University School of Medicine

Dr. Byung-Guk Yang

Director Korea Centers for Disease Control & Prevention (KCDC)
Ministry of Health & Welfare

Dr. Geun-Ryang Bae

Director Division of Infectious Diseases Surveillance Korea Centers for
Disease Control & Prevention (KCDC) Ministry of Health & Welfare

Dr. Dong-Woo Lee

Chief Medical Research Officer
Division of Infectious Diseases Control
Korea Centers for Disease Control & Prevention (KCDC)
Ministry of Health & Welfare

Dr. Hyun-Sook Koo

Senior Researcher
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Korea Centers for Disease Control & Prevention (KCDC)
Ministry of Health & Welfare

Mr. Jin Myung Kim

Assistant Director
Division of Diseases Control Policy
Ministry of Health & Welfare

Ms. Hee Soon Yu

Manager
Quality Assessment, Division 4
Health Insurance Review & Assessment Service (HIRA)

Dr. Doo Ryeon Chung

Division of Infectious Diseases
Samsung Medical Center Sungkyunkwan University School of Medicine

Dr. Cheol-In Kang

Division of Infectious Diseases
Samsung Medical Center Sungkyunkwan University School of Medicine

Dr. Young Eun Ha

Division of Infectious Diseases
Samsung Medical Center
Sungkyunkwan University School of Medicine

Dr. Kyungmin Huh

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Ms. Margaret Key

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Manager
International Initiatives to Control Antimicrobial Resistance (I Care)
Asia Pacific Foundation for Infectious Diseases (APFID)

Annex 3. Presentation slides for the APEC Expert Forum held at Lotte Hotel World in Seoul, Korea on 9 November 2013

Annex 3-1. Introduction of APEC Projects

Presented by **Dr. Jae-Hoon Song**

Project Overseer
Samsung Medical Center;
Asia Pacific Foundation for Infectious Diseases (APFID)
Korea

Annex 3-2. Introduction of International Campaign Program

Presented by **Dr. Cheol-In Kang**

Samsung Medical Center, Korea

Annex 3-3. Implementation of International Campaign Program

Presented by **Dr. So Hyun Kim**

Asia Pacific Foundation for Infectious Diseases (APFID), Korea

Annex 3-4. Antibiotic stewardship in China

Presented by **Dr. Yonghong Xiao**

1st Hospital affiliated to Zhejiang University, China

Annex 3-5. AMR containment advocacy in Thailand

Presented by **Dr. Visanu Thamlikitkul**

Siriraj Hospital, Thailand

Enhancing Health Security in APEC - International campaign program to control antimicrobial resistance in the Asia-Pacific

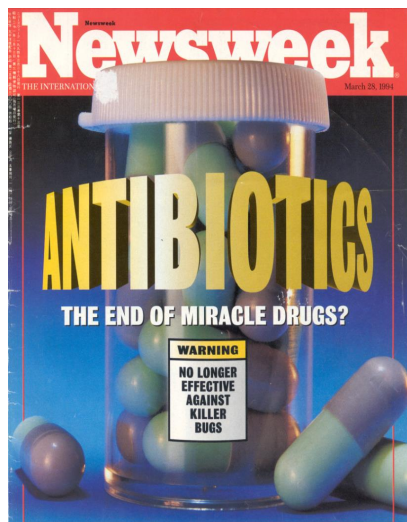
Jae-Hoon Song, MD, PhD

Samsung Medical Center
Sungkyunkwan University, Seoul, Korea ;
Asia Pacific Foundation for Infectious Diseases (APFID)



Background of the project

Global crisis of antimicrobial resistance



Background of the project

Global crisis of antimicrobial resistance



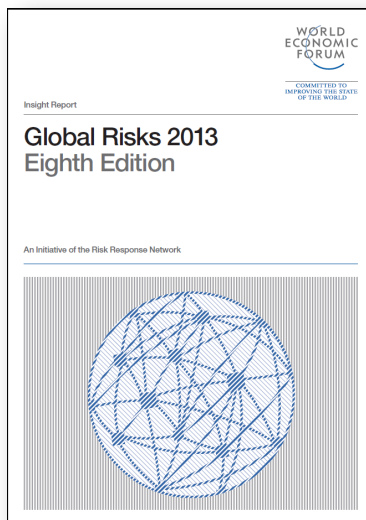
*"If current trends continue unabated, the future is easy to predict ... This will be a **post-antibiotic era**. A post-antibiotic era means, in effect, an **end to modern medicine** as we know it."*

- Conference on combating antimicrobial resistance : time for action
Copenhagen, Denmark March 14, 2012



Background of the project

Global crisis of antimicrobial resistance



- World Economic Forum highlights antimicrobial resistance as a major global risk in their Global Risks 2013 report published in January 2013.
- Annual cost of AMR :
 - USA : \$ 21 ~ 34 billion
 - EU : € 1.5 billion
 - Losses to GDP : 0.4 ~ 1.6 %

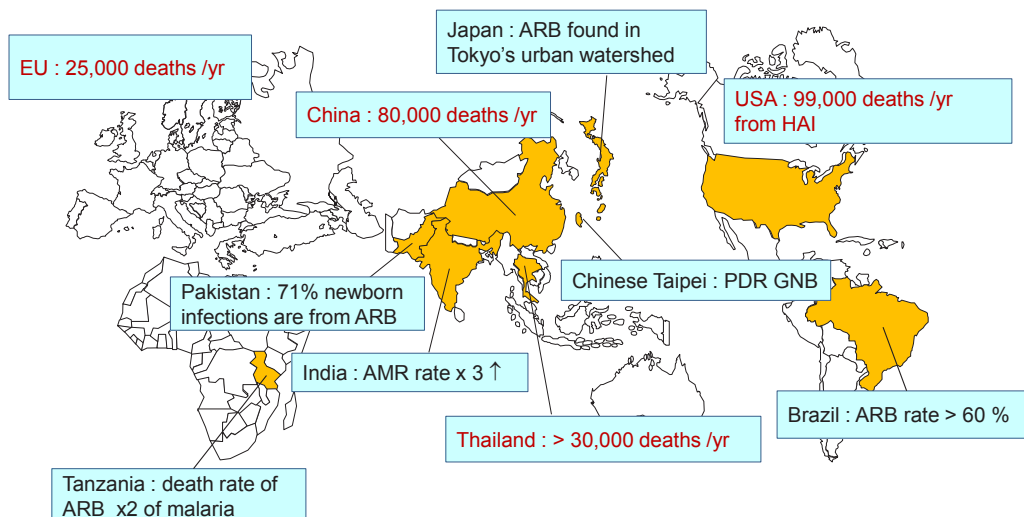


World Economic Forum. Global Risks 2013. 8th Ed.



Background of the project

Global crisis of antimicrobial resistance



World Economic Forum. Global Risks 2013. 8th Ed.



Background of the project

Current situation of resistance in the AP region

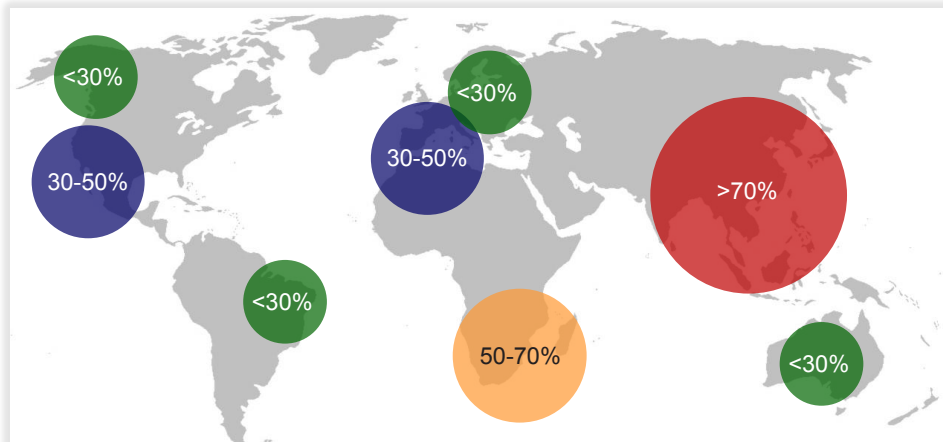
- Asian countries are the epicenter of antimicrobial resistance (AMR)
 - Highest prevalence rates of AMR in major bacterial pathogens
 - Two- or three-times higher than those in the western part of the world
- Main reasons for AMR in Asia
 - Widespread abuse and misuse of antibiotics
 - Spread of resistant clones
 - Lack of awareness, weak and unorganized policies and regulations
- Comprehensive strategies for control and prevention of AMR are urgently required in the AP region



Background of the project

Antimicrobial resistance in Asia

High prevalence of macrolide resistance in pneumococci in Asia

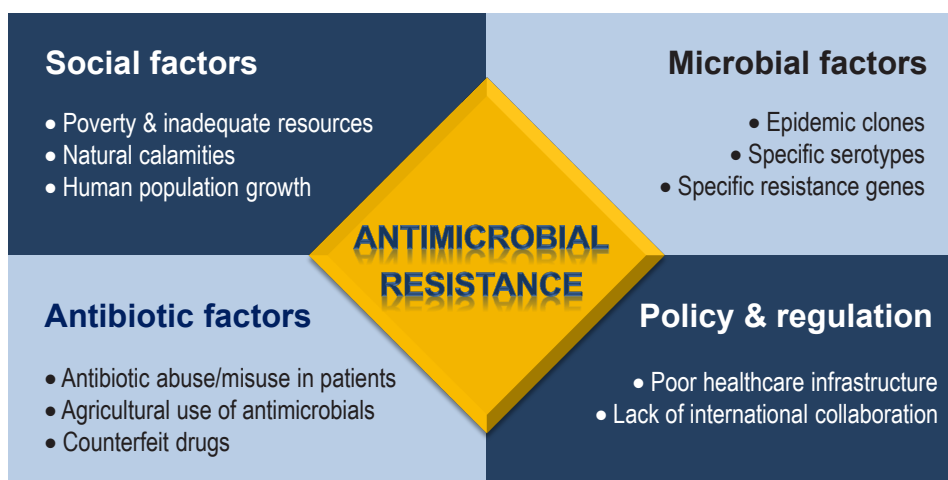


Kim SH, ANSORP. *Antimicrob Agents Chemother.* 2012;56:1418-1426; Reinert RR, et al. *Antimicrob Agents Chemother.* 2005;49:2903-2913; Sahm DF, et al. *Otolaryn Head Neck Surg.* 2007;136:385-389; Jacobs MR, et al. *Antimicrob Agents Chemother.* 2010;54:27162-2719; Harimaya A, et al. *J Infect Chemother.* 2007;13:219-223; Liebowitz LD, et al. *J Clin Pathol.* 2003;56:344-347.



Background of the project

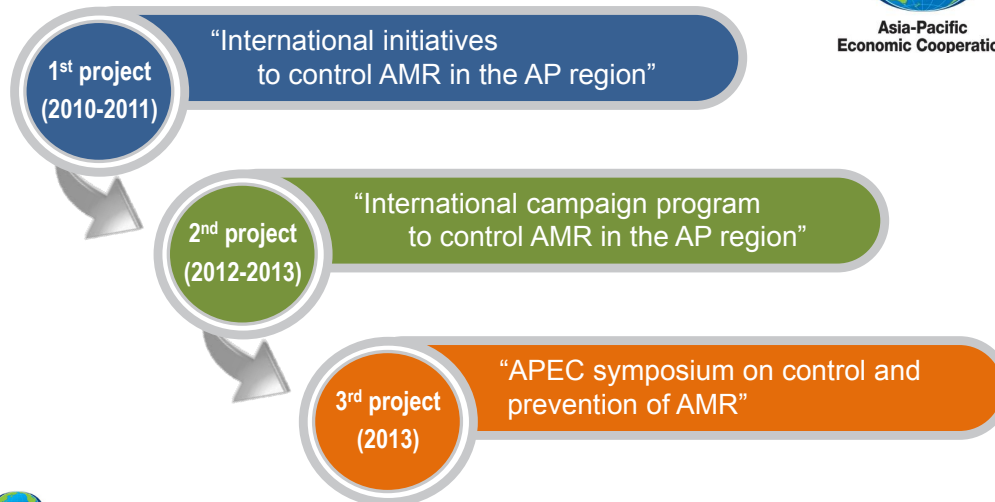
Multiple factors for a bad situation



APEC project to combat AMR in Asia

Asia's effort since 2010

Collaboration with APEC to control and prevent AMR in Asia



APEC project to combat AMR in Asia

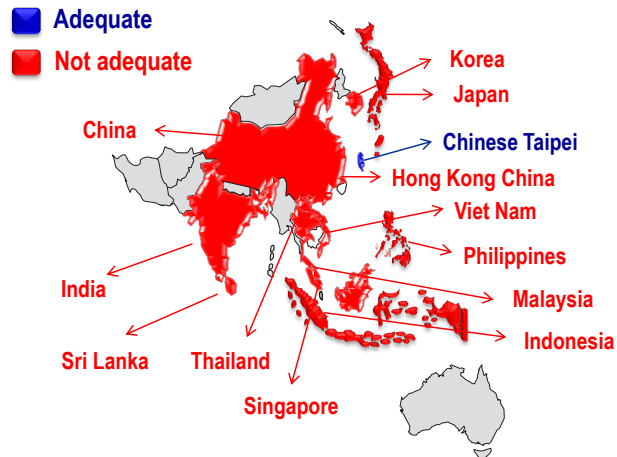
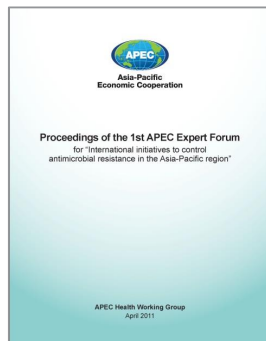
Asia's effort since 2010



APEC project to combat AMR in Asia

1st APEC project (2010-2011)

Public's knowledge and attitudes to antibiotic use in Asia (2011)*

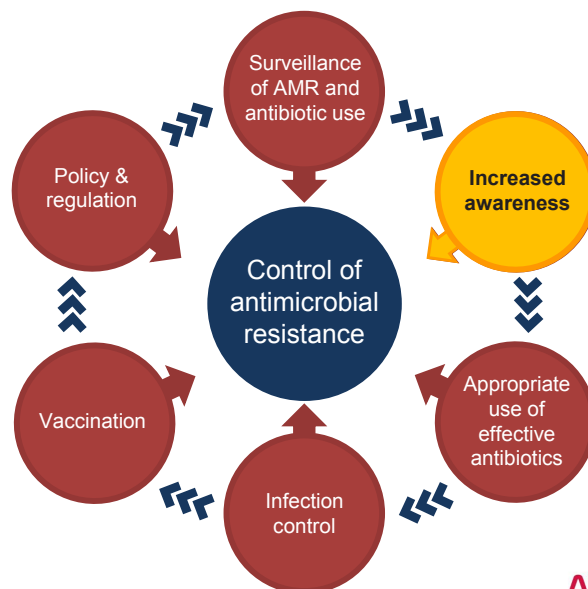


* Based on questionnaire results from ID experts in Asian countries



APEC project to combat AMR in Asia

1st APEC project (2010-2011)



APEC project to combat AMR in Asia

Current APEC project (2012-2013) : "Campaign 4"

- The first and the most urgent plan is to increase the awareness of AMR and to promote the appropriate use of effective antibiotics that can prevent the emergence of AMR in the region
- Educational and campaign programs should be implemented to increase the awareness in the region
- There have been no effective campaign programs to control and prevent AMR in the Asian region
- International collaboration for campaign program is very important because resistant pathogens can spread across the borders



APEC project to combat AMR in Asia

Current APEC project (2012-2013) : "Campaign 4"



APEC project to combat AMR in Asia

Campaign 4 : goal and objectives

❖ Long-term goal of the project

To control and prevent AMR in the AP region based on strategic action plans including increased awareness of AMR, appropriate antibiotic use, infection control, vaccination, and relevant policies and regulations

❖ Main objectives of the project

- To develop campaign strategies to increase the awareness of AMR and to promote the appropriate use of antibiotics in the AP region
- To develop and provide platform contents and materials of campaign program for APEC economies
- To set out to implement the international campaign program in APEC economies



APEC project to combat AMR in Asia

Campaign 4



For All, For Life
save antibiotics



APEC project to combat AMR in Asia

Host organization of Campaign 4

APFID* **CARES** the future of health in Asia since 1996

Conference

ISAAR

International Symposium on Antimicrobial Agents and Resistance

Awareness

I CARE

Initiatives to Control Antimicrobial REsistance

Resource

ABB

Asian Bacterial Bank

Experiment

IDRI

Infectious Disease Research Institute

Surveillance

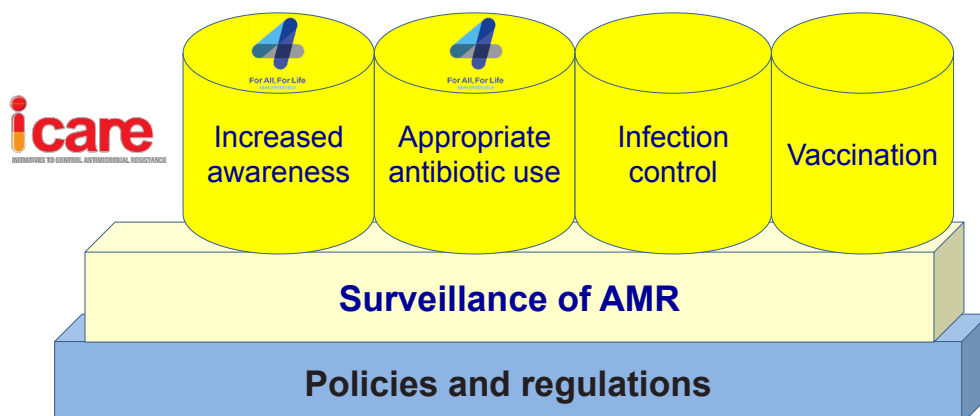
ANSORP

Asian Network for Surveillance of Resistant Pathogens



APEC project to combat AMR in Asia

"I CARE" strategies in Asia



APEC project to combat AMR in Asia

Collaboration for Campaign 4



Expected impact of the project

International collaboration for control of AMR



International campaign program to control antimicrobial resistance in Asia

Campaign 4

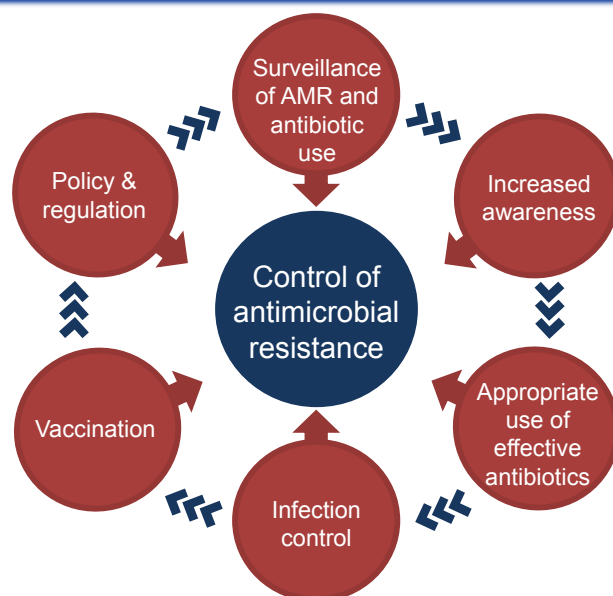
Cheol-In Kang, MD

Associate Professor of Medicine
Division of Infectious Diseases, Samsung Medical Center,
Sungkyunkwan University School of Medicine, Seoul, Korea



Strategy for control of antimicrobial resistance

Strategic action plan in Asia : Six major pillars



Strategies to control antimicrobial resistance in Asia

"I care" : Initiatives to Control Antimicrobial REsistance



Increased awareness of resistance

Public, healthcare professionals and government

Appropriate use of antibiotics

Clinical practice and animal husbandry

"Asia's strategy to combat AMR"

Infection control

Prevent spread of resistance

Vaccination

Prevent infection by vaccination



Requirements for a successful campaign

Symbolic

Clear

Popular

Diffuse





Concept creation

genesis branding concept creation company

genesis group
flux group preparing a new era



APFID
ASIA PACIFIC FOUNDATION
FOR INFECTIOUS DISEASE



APFID
ASIA PACIFIC FOUNDATION
FOR INFECTIOUS DISEASE

- **No** antibiotics without prescription
- **No** left-over antibiotics
- **No** antibiotics for common cold
- **No** antibiotics with inappropriate dose & duration

Increased awareness of AMR / Appropriate use of antibiotics
Strategic action plan in Asia : campaign 4



Major Targets



For All, For Life
save antibiotics

- General public and patients
- Healthcare professionals
- Pharmaceutical industry
- Policy-makers and planners

APFID
ASIA PACIFIC FOUNDATION
FOR INFECTIOUS DISEASES

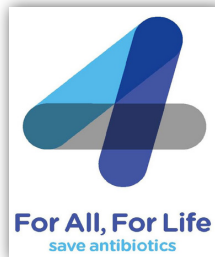
Increased awareness of AMR / Appropriate use of antibiotics
Strategic action plan in Asia : campaign 4



Campaign 4 for Asian countries

APFID
ASIA PACIFIC FOUNDATION
FOR INFECTIOUS DISEASES

World Health Organization
Western Pacific Region



For All, For Life
save antibiotics

APEC
Asia-Pacific
Economic Cooperation

**Professional society /
Government**

APFID
ASIA PACIFIC FOUNDATION
FOR INFECTIOUS DISEASES

Campaign 4: PR

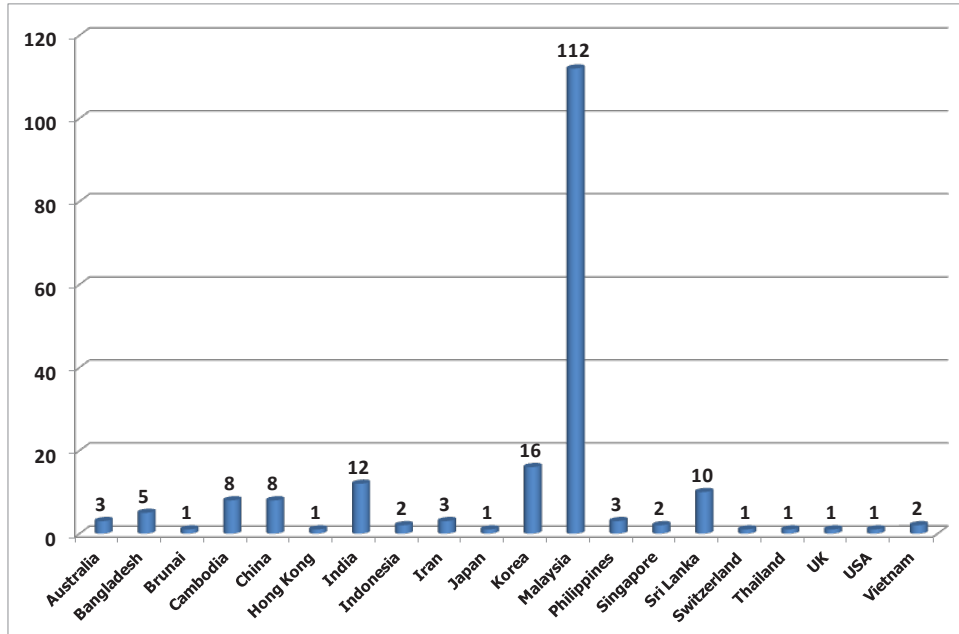


Survey in ISAAR 2013

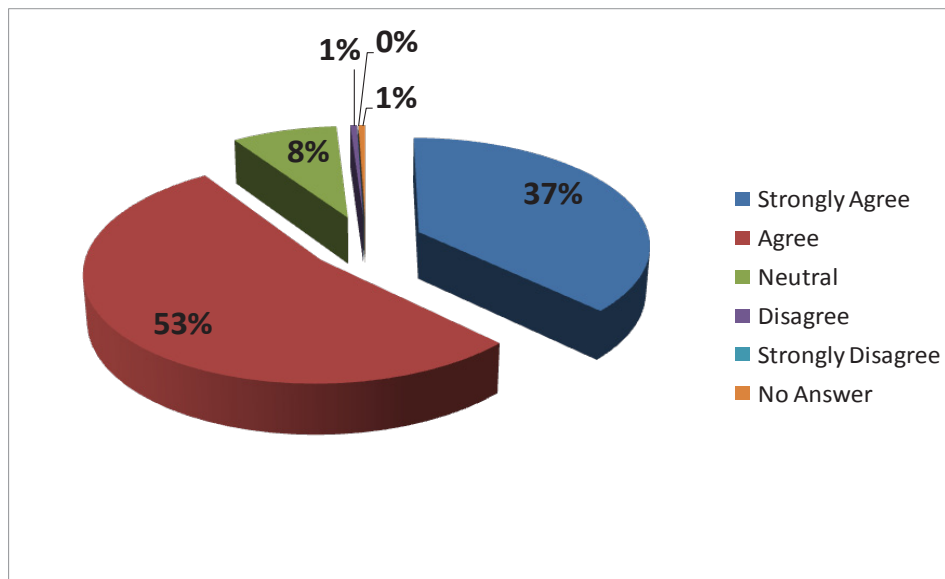
Strategic action plan in Asia : campaign 4



Country distribution in ISAAR 2013 survey

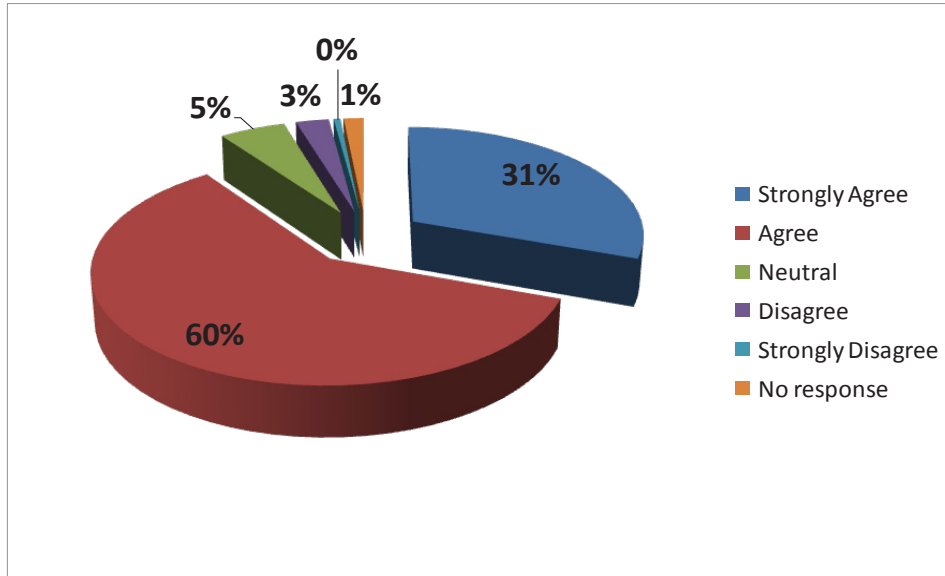


Q1. Do you agree that the title of Campaign(Campaign 4) and its slogan will arouse the curiosity and interest of the general public in your country?

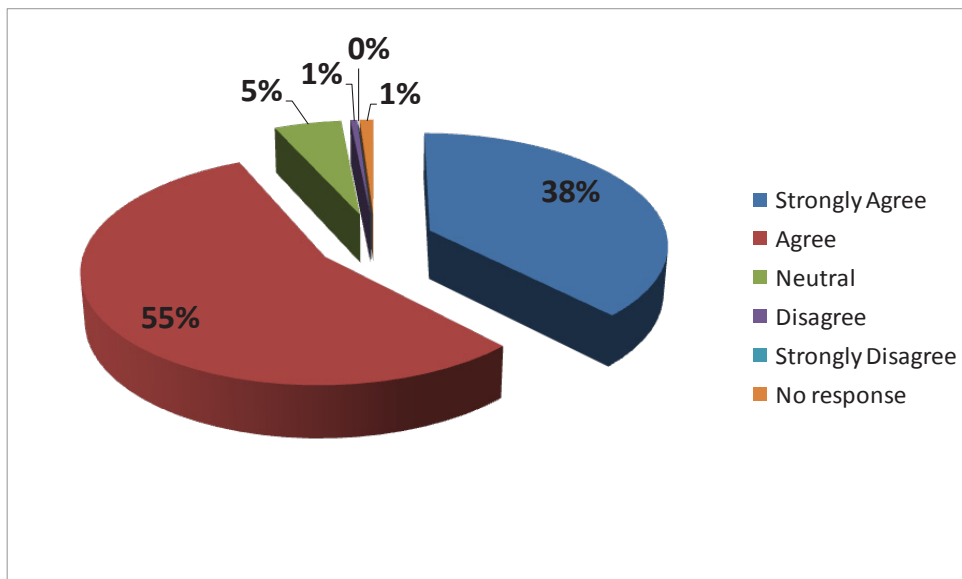




Q2. Do you agree that the title of Campaign(Campaign 4) and its slogan will arouse the curiosity and interest of the health care professionals in your country?

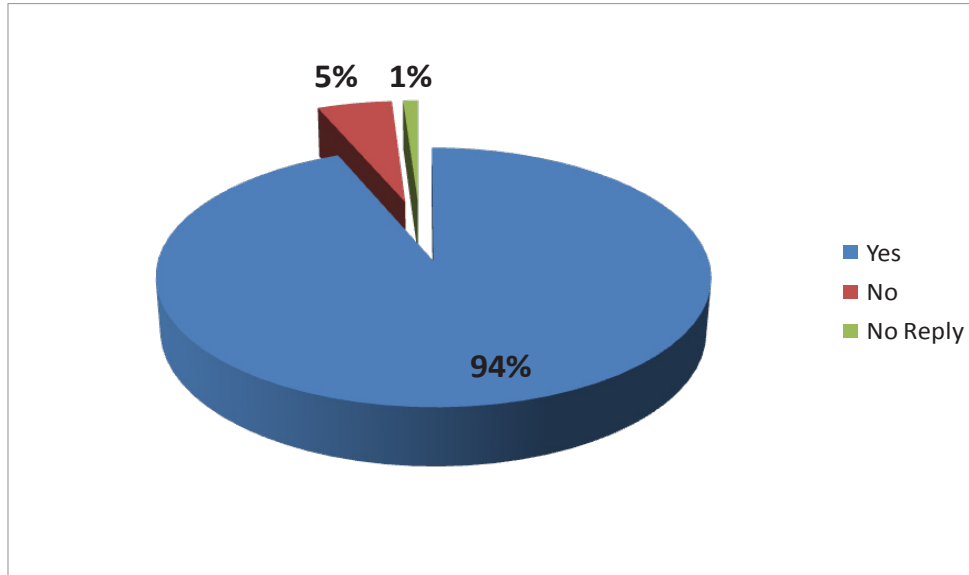


Q3. Do you think the Campaign title is easy to remember?

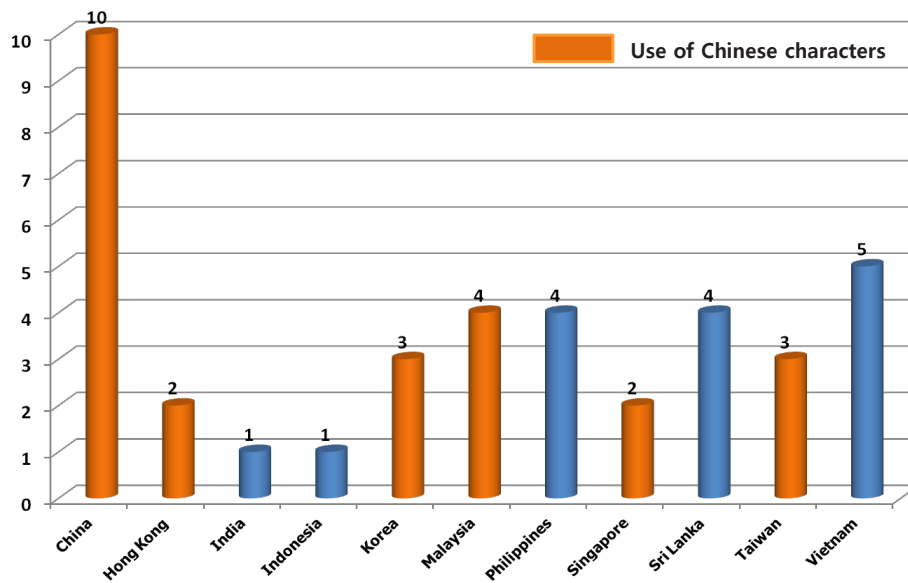




Q4. Are you willing to join our campaign and spread our message to your colleagues?

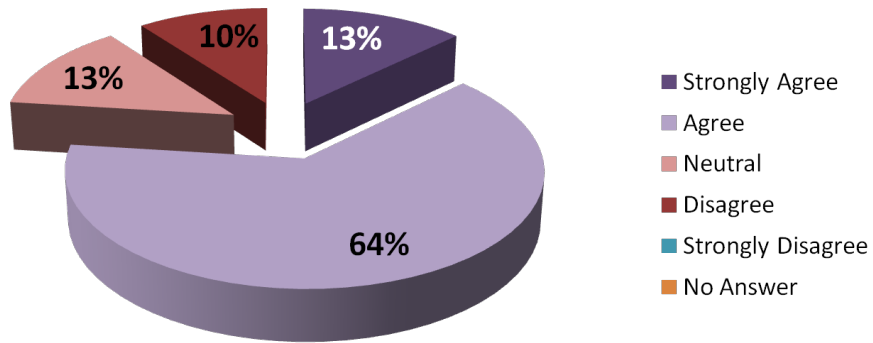


**Electronic survey in ANSORP members
(11 countries, 39 members)**

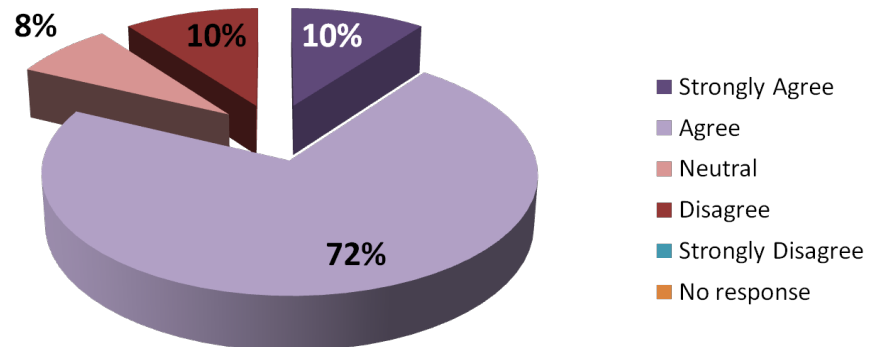




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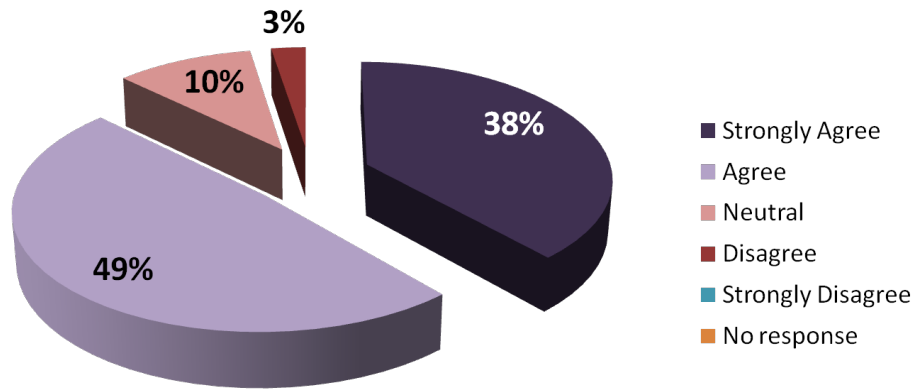


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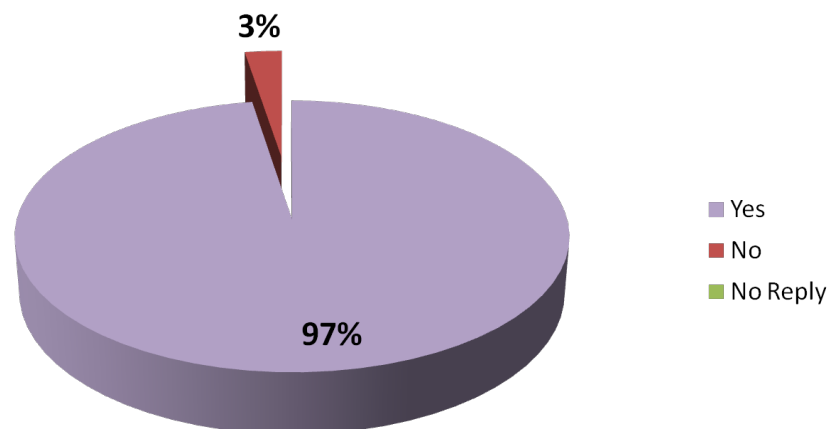




Q3. Do you think the Campaign title is easy to remember?



Q4. Are you willing to join our campaign and spread our message to your colleagues?



Implementation of international campaign program in Asia

Campaign 4

So Hyun Kim, DVM, PhD

Asia Pacific Foundation for Infectious Diseases (APFID)



Objectives of Campaign 4

- **Multifaceted:** It is a multifaceted, strategic campaign designed specifically to address the rising risk of AMR in the AP region.
- **Action:** It will work to drive action in response to this threat in an effort to save lives with rising awareness of AMR related issues (education, research).
- **Partnership:** Working alongside healthcare providers and policymakers, the campaign aims to galvanize action at the private and public levels to prevent and address AMR in the AP region.

Implementation of Campaign 4

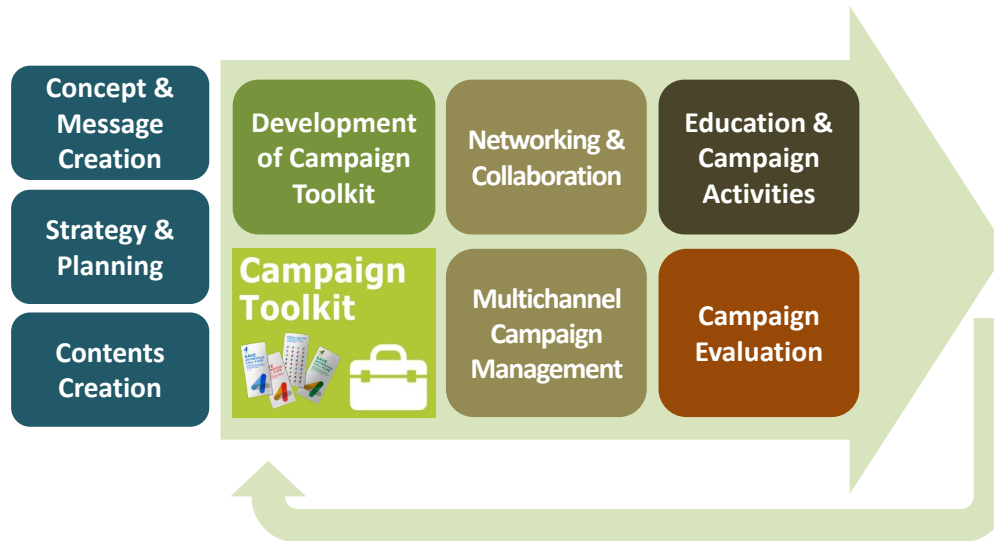
Prevention and control of AMR in the Asian region through increasing awareness of AMR and promoting appropriate antibiotic use



How Campaign 4 is done ?



How Campaign 4 is done in Asia ?



Education for Campaign 4

Campaign Toolkit

Posters / brochures / leaflets
Educator tool kit
E-learning
Website
Video clips
Special articles
Fact sheets ...



- Target population
 - Parents of young children
 - School nurses
 - Students
 - Healthcare professionals
 - Patients & guardians
- Available in different languages
- Available in multiple channels
 - web, mobile, social & print media



Website for Campaign 4

Millions of people throughout the world **die of very common** bacterial infections every year.

We face "potentially catastrophic consequences"

"A post-antibiotic era means, in effect, an end to modern medicine as we know it. Things as common as strep throat or a child's scratched knee could once again kill."

Dr. Margaret Chan, WHO Director-General

Millions of people throughout the world die of very common bacterial infections every year.

19,000 About 19,000 people die every year from MRSA

17,000 About 17,000 people die every year from antibiotic resistance



Take Action Now!



Leaflets for Campaign 4

Colds and antibiotics

Cough, cough! Antibiotics will cure a cold right away.

Antibiotic resistance

Emergence of antibiotic resistance

Antibiotic resistance is a phenomenon where antibiotic effects in destroying germs, antibiotic abuse and overuse, and the subsequent overuse of antibiotics lead to the emergence of antibiotic-resistant germs.

Seriousness of antibiotic resistance

Antibiotic-resistant bacteria can't be killed with antibiotics. They can cause serious illness, and sometimes even death.

Importance of preventing antibiotic resistance

Antibiotic resistance is a serious problem threatening our lives. Because antibiotic resistance, once appeared, is hard to eliminate, we have to prevent and manage the antibiotic resistance through the proper use of antibiotics, surveillance and infection control.

Saving antibiotics to save lives

The Campaign 4 is an international program to increase the awareness of antibiotic resistance in major human pathogens and to promote the appropriate use of effective antibiotics in general public and healthcare professionals in the Asian region. The Campaign 4 is a part of "Initiatives to Control Antimicrobial Resistance" (ICAR), which is an international strategy developed by the Asia Pacific Foundation for Infectious Diseases (APFID) to prevent and control antimicrobial resistance in the Asian region.



E-learning for Campaign 4

Title	Appropriate use of antibiotics
Running Time	13 min
Contents	1) Antibiotics are not a cure-all 2) Appropriate use of antibiotics is the most important



Evaluation of Campaign 4

Formative evaluation	Assess the effectiveness of Campaign 4 to increase the awareness of antibiotics and AMR
Process evaluation	Assess how well the campaign 4 was implemented by a survey of the target populations
Outcome evaluation	Assess the changes that has occurred in the target population as a results of Campaign 4 by pre-/post-survey (changes in knowledge and attitudes towards antibiotics and AMR)



Implementation of Campaign 4

Providing Asia's solutions to AMR



Campaign 4
For All, For Life
save antibiotics



Join Campaign 4
For yourself, for your family,
For the lives of all

Antibiotic Stewardship in China

-Changing Policies to Meet the Challenge of Antibiotic Resistance



Yonghong Xiao, MD, PhD

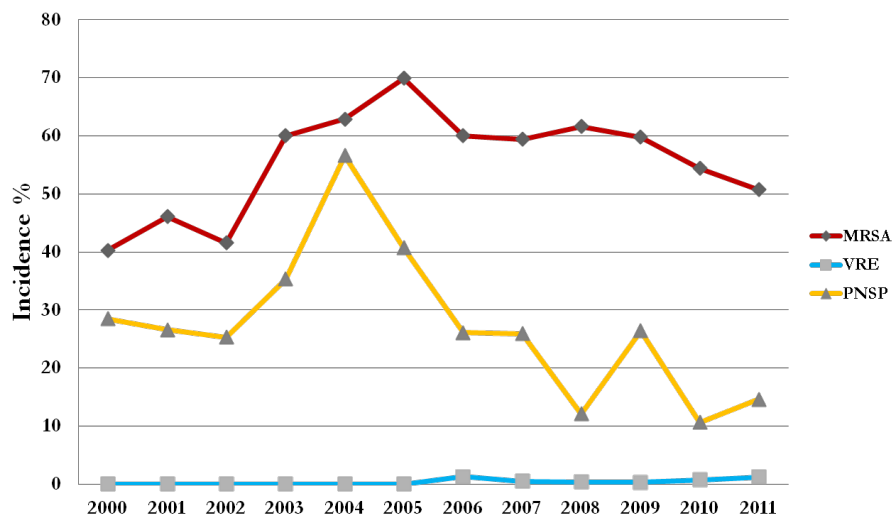
State Key Laboratory for Diagnosis & Treatment of Infectious Diseases
The First Affiliated Hospital, School of Medicine
Zhejiang University

Part I

Bacterial resistance:

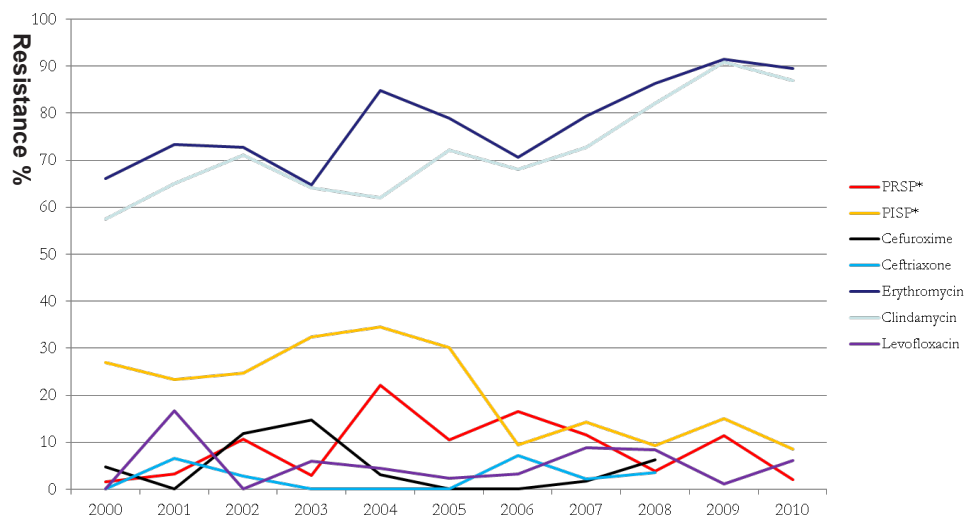
- a severe public health challenge in China

Major Resistant Gram (+) Germs



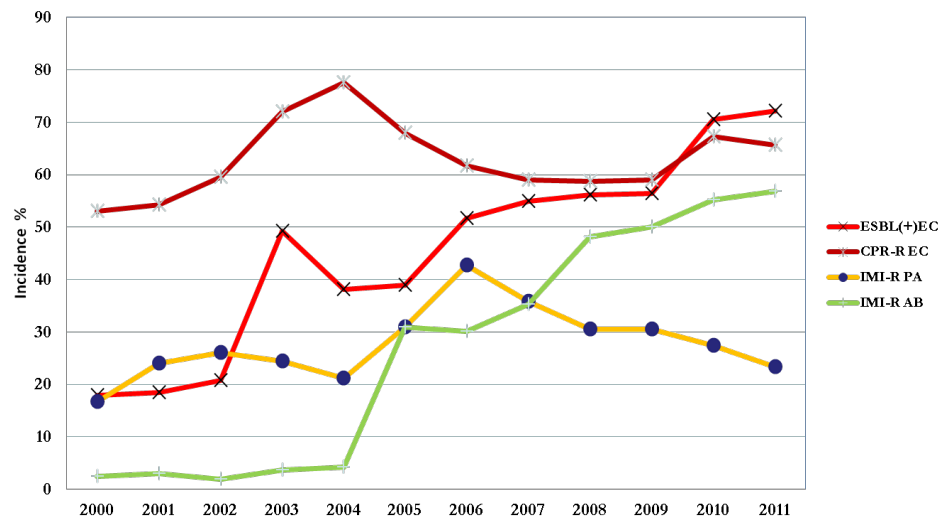
Drug Resist. Updat. (2011), doi:10.1016/j.drug.2011.07.001; Chin J Nosocomiol, 2011, 23:4896

Resistance of *S. pneumoniae*



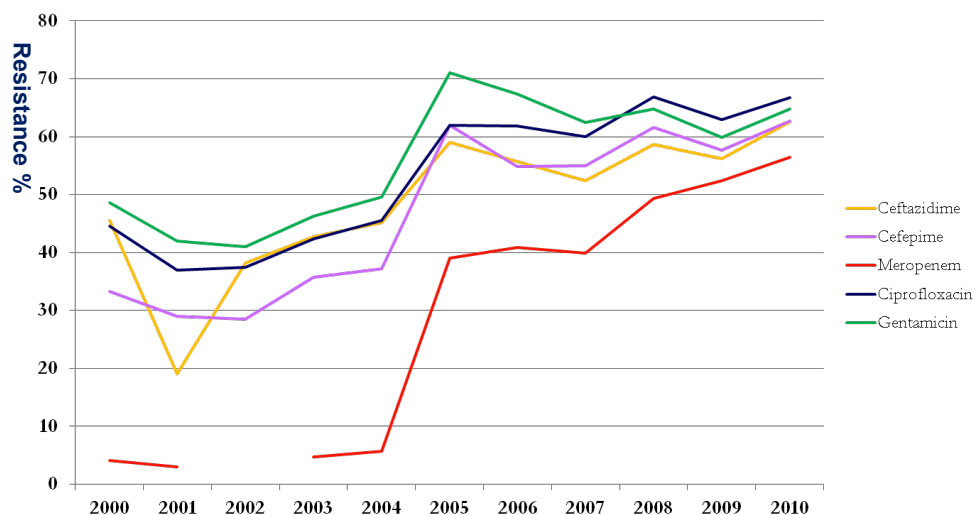
Natl Med J Chin, 2001, 81:17;Chin J infect Chemother, 2002, 2:3;Chin J Infect Dis, 2004, 22:156;Chin J Infect Chemother, 2005,5:5;Chin J Infect Chemother,2005,5:199;Chin J Infect Chemother, 2006,6:290;Chine J Infect Chemother 2008, 8:1;Chin J Nosocomiol 2008, 18:1054;Chin J Nosocomiol 2010,20:2379;Chin J Infect Chemother, 2010,10:325

Major G(-) resistance bacteria



Drug Resist. Updat. (2011), doi:10.1016/j.drug.2011.07.001; Chin J Nosocomiol, 2011, 23:4896

A. baumannii resistance epidemiology



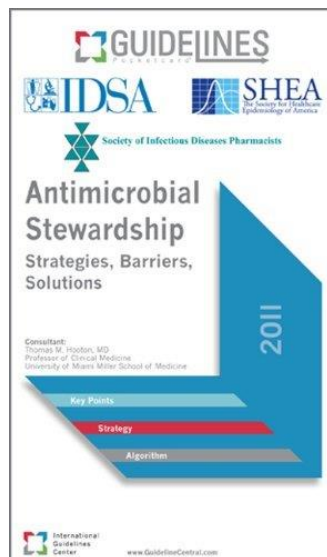
Natl Med J Chin, 2001, 81:17;Chin J infect Chemother, 2002, 2:3;Chin J Infect Dis, 2004, 22:156;Chin J Infect Chemother, 2005,5:5;Chin J Infect Chemother,2005,5:199;Chin J Infect Chemother, 2006,6:290;Chine J Infect Chemother 2008, 8:1;Chin J Nosocomiol 2008, 18:1054;Chin J Nosocomiol 2010,20:2379;Chin J Infect Chemother, 2010,10:325

Part II

Existing Policies Before 2011:

- No efficacy for the control of AMR

Is antibiotic stewardship work?



Strategy

General Management and Implementation Issues

Auditing and feedback

- Real-time auditing helps optimize therapy on an individual-patient basis.
- Constructive and patient-specific feedback from experts in antimicrobial therapy is essential.
- The optimal method of communicating the recommendation to the provider—that is, feedback—must be defined.
- Match the mode of communication to the level of acuity and complexity.

Prescriber education

- Passive education about appropriate antimicrobial use can include grand rounds, newsletters, and written guidelines.
- Passive education should be distinguished from active education that occurs in the context of auditing and feedback or preauthorization for specific patients.
- Education about the program itself should not be overlooked.
- A public, up-to-date Web site is an excellent way to inform providers about their institutional antimicrobial stewardship program and offers easy access to information about current strategies:

Informational Websites

www.nebraskamed.com/asg

www.hop.wy.edu/pharmacy/AMT/default.html

www.ucsf.edu/ibmp

Guideline implementation

- Guidelines must be regularly re-evaluated and, if necessary, revised to reflect recent developments reported in the scientific literature.

Application of information technology

- Applications on the Web or on personal digital assistants can greatly facilitate rapid updating and dissemination of information compared with paper-based sources.

1. Administrative

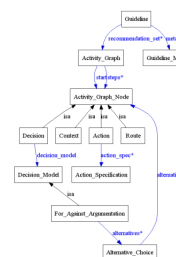
Chronology of regulations issued by MOH

- 2002 Temporary Regulations of Pharmacy Affairs for Medical Institutions
- 2004 Setting-up of Department of Infectious Diseases in General Hospitals
- 2006 Regulations of Hospital Infection Control
- 2008 Recommendations to Enhance Hospital MDRO Infection Control
- 2007 Regulations of Prescription Administrative
- 2007 Hospital Prescription Revising Methodology
- 2011 Regulations of Pharmacy Affairs for Medical Institutions
- 2012 Administrative Regulations on the Clinical use of Antibiotics



2. Guidelines

- 2001 Clinical Pathways for Diseases
- 2004 Principles for Clinical Use of Antibiotics
- 2006 National Formulary
- 2010 Therapeutic Consensus for Infections of NDM-1 Producing *Enterobacteriaceae*
- 2012 National Guidelines for Antimicrobial Therapy



3. Education and Training

- Mandatory Continuing Medical Education System
- 2008 Clinician Training Project for AB Rational Use
- 2009 Clinical Microbiologist Training Project
- 2011 Clinician Training for Antimicrobial Agents
Prescription Authority in Institutions

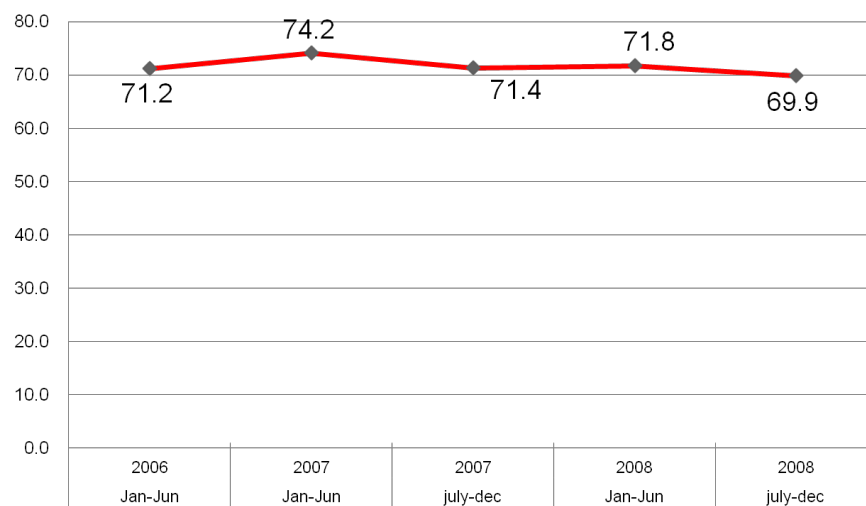


4. Surveillance & Monitoring

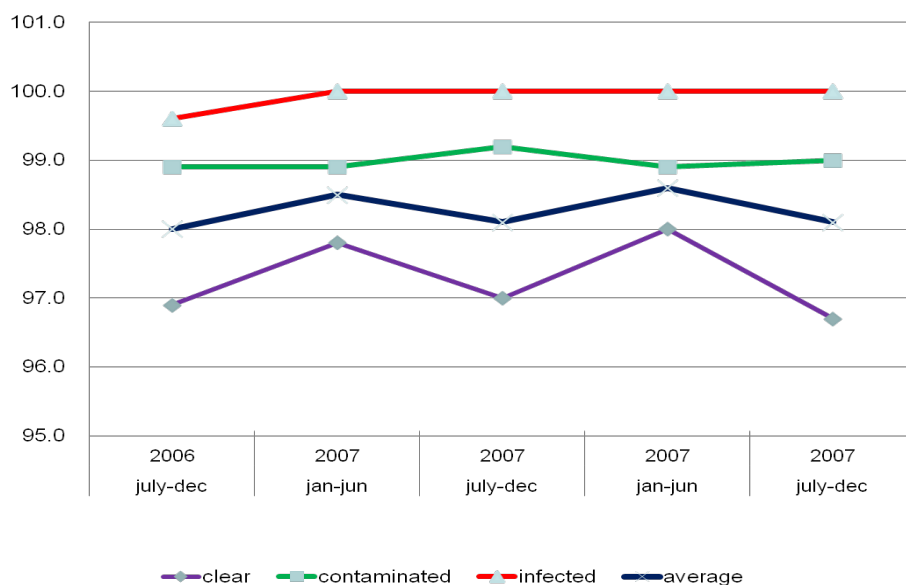
- 2005: Surveillance networks: hospital antibiotics consumption and bacterial resistance (Mohnarin)
- 2008: MOH Expert Committee of Drug Rational Use
- 2012: Both the networks being expanded to cover more than 1300 member hospitals
 - 2012 Provincial surveillance networks being set up



**Did those technical measures
work effectively on AB use?**

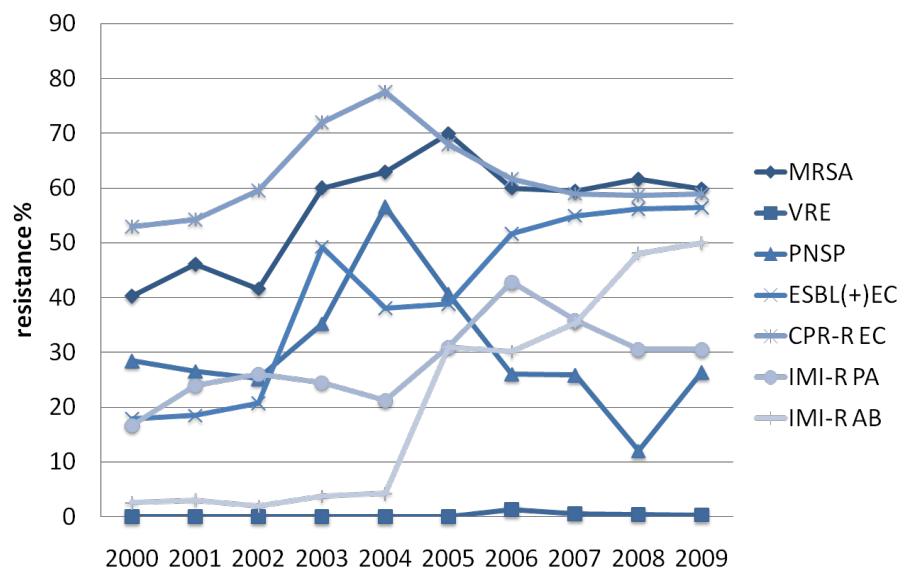


AB prescribing rate in hospitalized patients



AB prescribing rates in surgical patients

Trends of bacterial resistance in China



Part III

Policy change:

- government leading campaign against AMR from 2011

Setting targets for AMR campaign

- Limited AB number in hospitals:
 - Tertiary hospital: <50 antibiotics
 - 2ed grade hospital: <35 antibiotics
 - Stomatological hospital: < 35 antibiotics
 - Tumor hospital: <35 antibiotics
 - Children's hospital: <50 antibiotics
 - Mental health center: <10 antibiotics
 - Women's hospital: <40 antibiotics



Setting targets for AMR campaign

–Targets for general hospitals:

- AB prescription rate for inpatients: <60%
- AB prescription for outpatients: <20%
- AB prescription in emergency patients: <40%
- AB utilization for inpatients: <40DDDs/100
- Microbiological examination rate for AB therapy patients: $\geq 50\%/80\%$



Promotions in different levels and scales



Initiation in May 2011 by vice-minister of China



Local healthcare authority promotion



Institute inspection



MOH promotion

Inspections to institutions

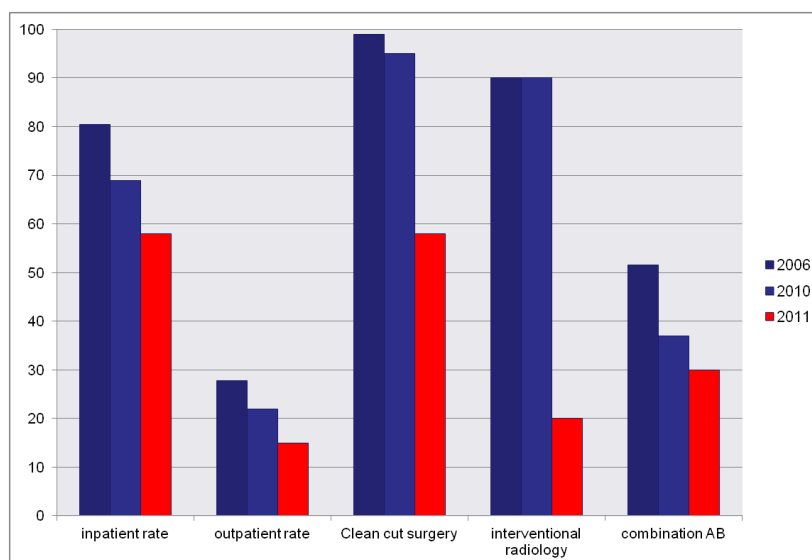


New round MOH promotion in 2012

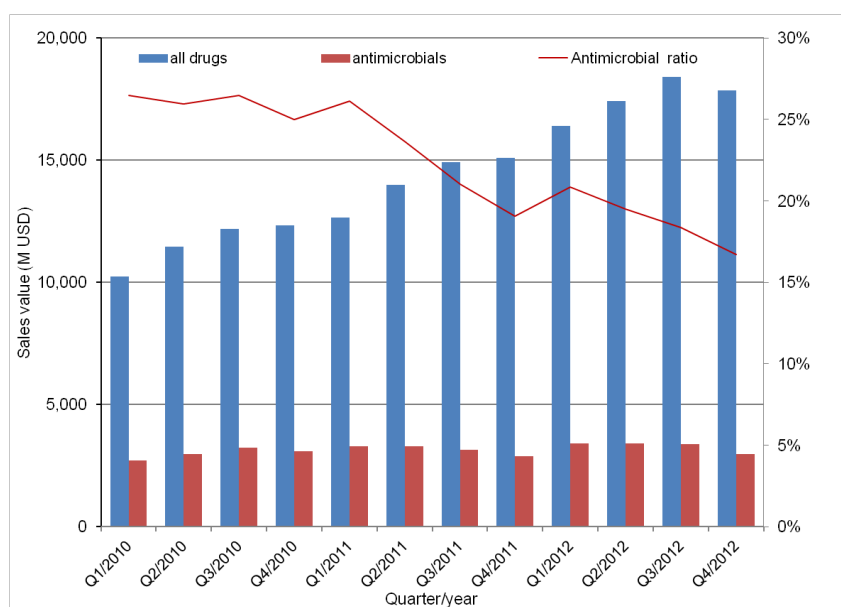


Institute presentation to inspectors in 2012

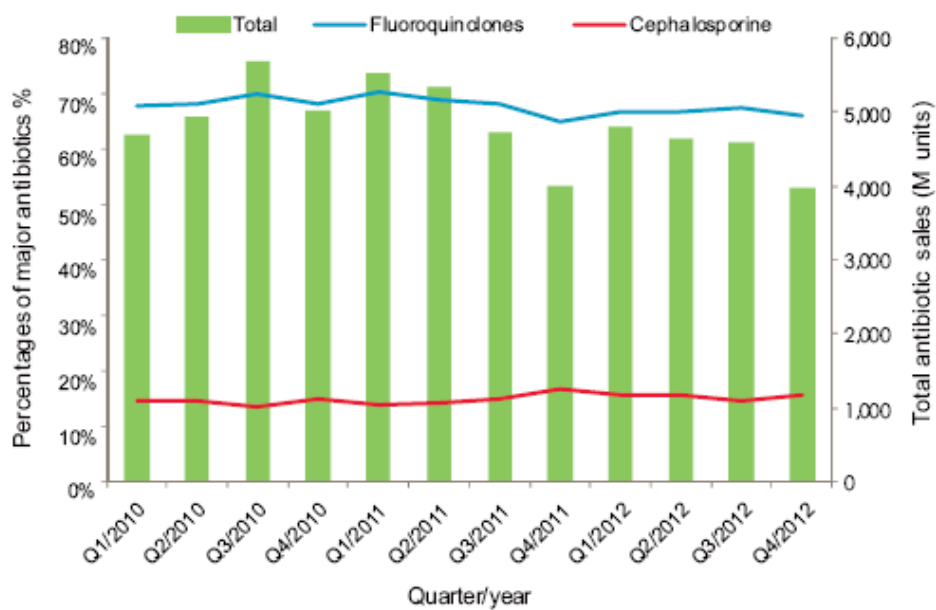
Achievement of ASP campaign in 2011



Adopted from MOH China press report



Drug & antibiotic sale values



Antibiotic sale in packing units

Administrative Regulations on the Clinical Use of Antibiotics (issued in 2012)

Contents

Chapter 1 Overview

Chapter 2 Institutional Responsibilities

Chapter 3 Management for Clinical Use of Antibiotics

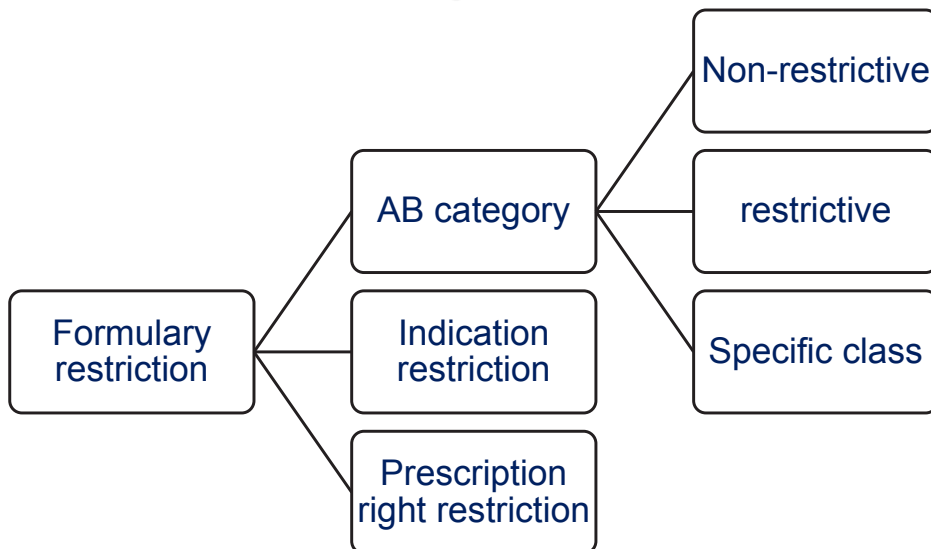
Chapter 4 Monitoring for AB Use

Chapter 5 Legal Responsibilities

Chapter 6 Appendix



Core strategy: -formulary restriction

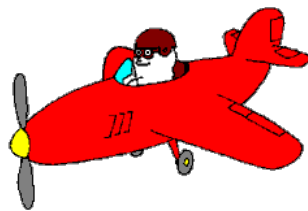


Part IV

Challenge:

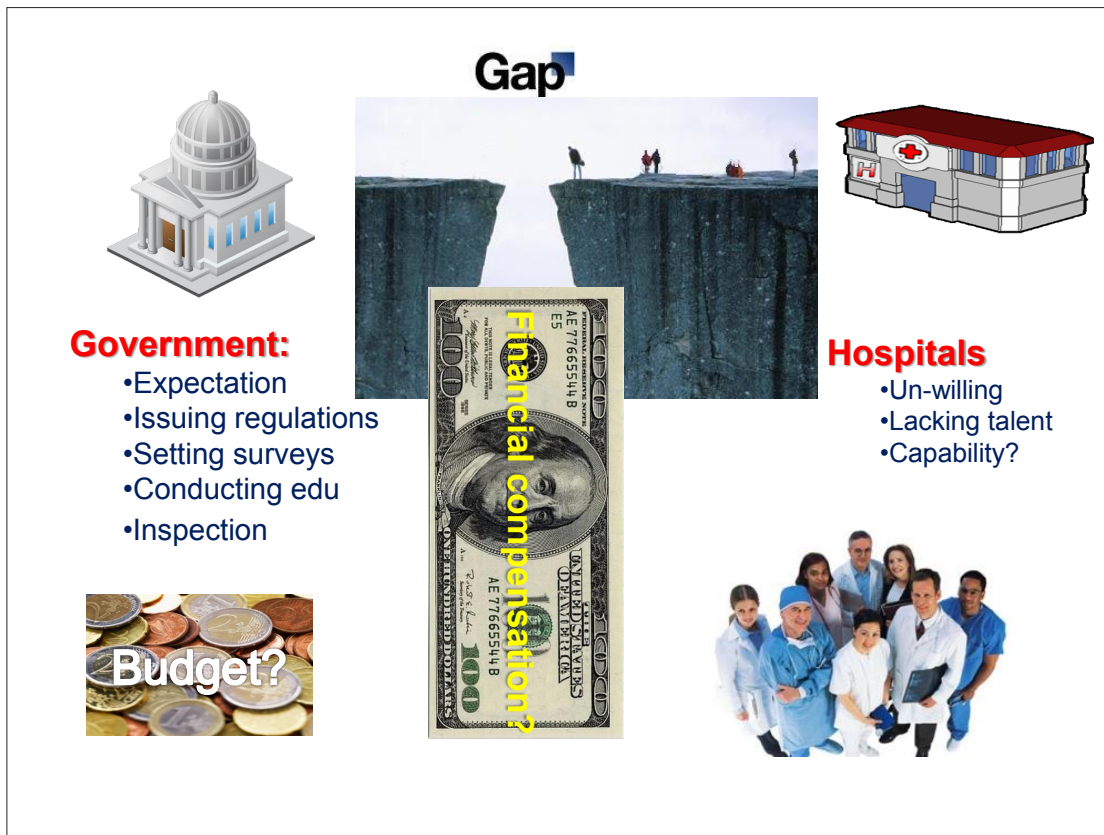
- sustainable system for AMR containment after campaign?

Big Challenge for future ASP in China



Airplane needing a racetrack for landing:

ASP needing institute WG for sustainable development?



What can we do?

Making use of the great opportunity of **Healthcare reform** to promote AB rational use

- Healthcare insurance for all citizen
- Essential medicine system
- Primary healthcare service system
- Healthcare equalibility for all persons
- Public hospital reform



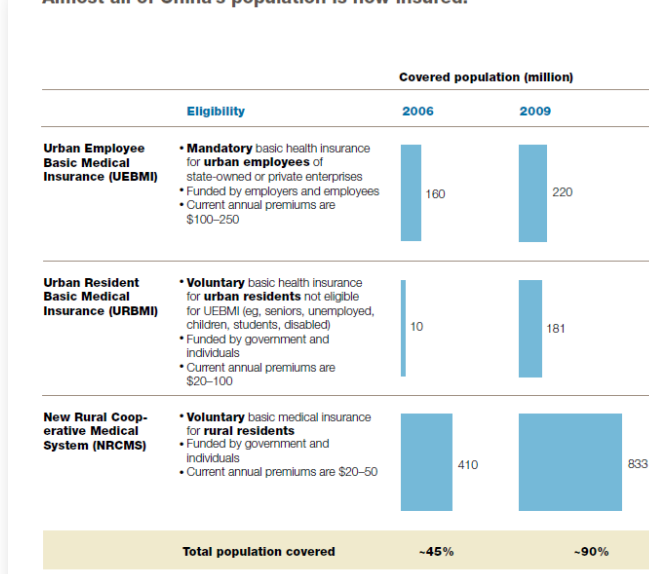
Cutting off the linkage between drug sale and profit (hospital and staff)



Government leading ASP → Institute ASP

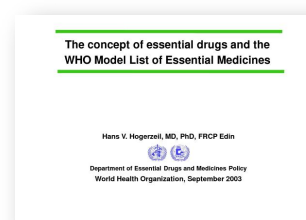
Healthcare Insurance Coverage

Almost all of China's population is now insured.

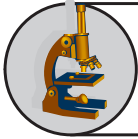


Essential Medicine & Zero Profit Drug Sale

- **Essential medicine system**
 - 2009 national version EDL for primary healthcare institute (207 drugs)
 - Provincial supplementary EDL
 - All primary institute EDL accessible
 - Higher reimbursement rate for EDL
 - Training and educations for EDL use
 - 2012 version EDL for all institute under way
- **Zero profit drug sale system in hospital**
 - Starting from EDL in 2009
 - Starting from primary healthcare institutes
 - Will be carried on in all institutes and all drugs



Urgent Needing for Professional Talents



Clinical Microbiologists



Clinical Pharmacists



Infectious Disease Physicians



AMR Containment Advocacy in Thailand

*Professor Visanu Thamlikitkul, MD
Health Systems Research & Development Program
Faculty of Medicine Siriraj Hospital
Mahidol University, Bangkok, Thailand*

AMR Containment & Prevention in Thailand

- Approach Health Systems Research Institute (HSRI)
- Appoint a committee on AMR containment research & development
- Set up the goals of AMR containment

AMR Containment & Prevention in Thailand

- Propose the roadmaps to AMR containment 2013-2016
- ✓ Estimate AMR burden
- ✓ Review current AMR containment system
- ✓ Propose desirable AMR containment system
- ✓ Prepare AMR containment package to fill the gap
- ✓ Organize public hearing from stakeholders
- ✓ Finalize AMR containment package 2013-2016
- ✓ Establish infrastructure on National Alliance for AMR

AMR Containment & Prevention in Thailand

- Prevention & Control
- ✓ Solicit support from donors
- Co-ordinate with international campaigns
- Implement AMR containment package

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