The Philippine Action Plan to Combat Antibiotic Resistance: One Health Approach

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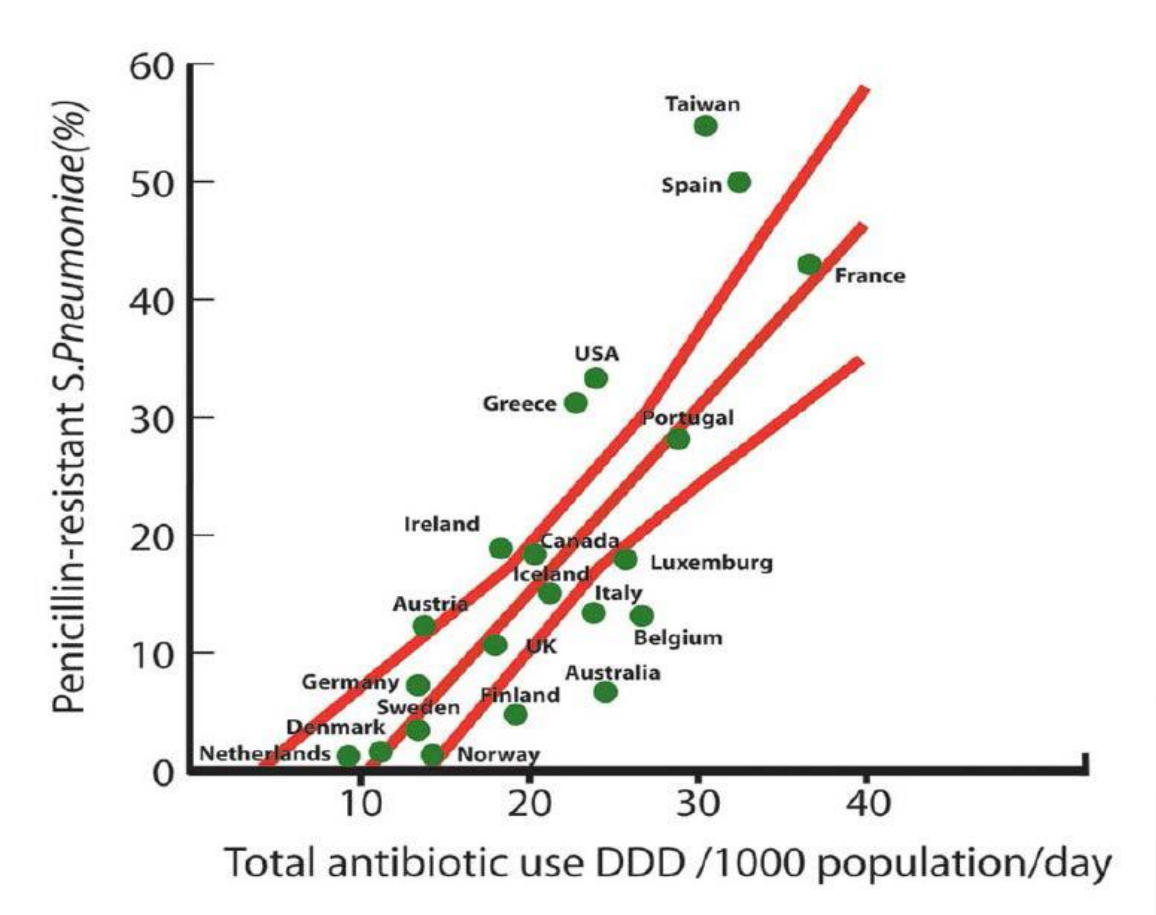
The problem of Antimicrobial Resistance

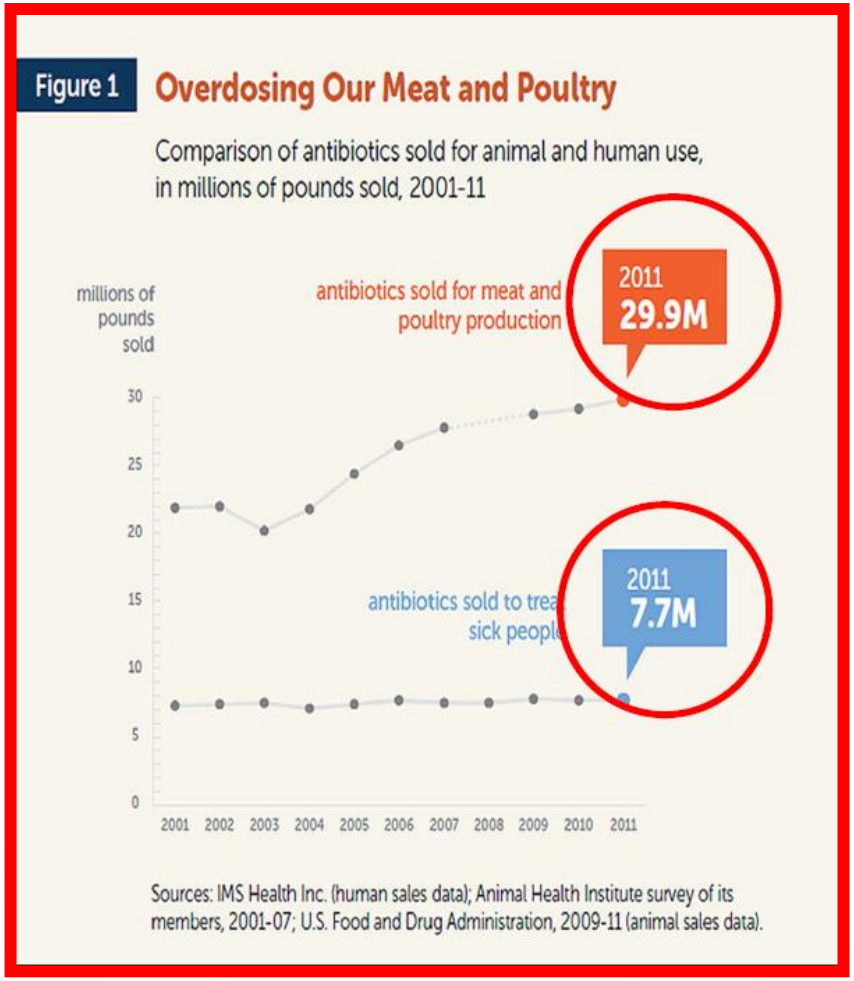
- **AMR definition - resistance of a microorganism to an antimicrobial medicine to which it was originally sensitive**
- **Widespread overuse and inappropriate use of antmicrobials is fuelling an increase in antimicrobial-resistant organisms.**

"The more we use them, the more we lose them"



From Albrich et al EID 2004

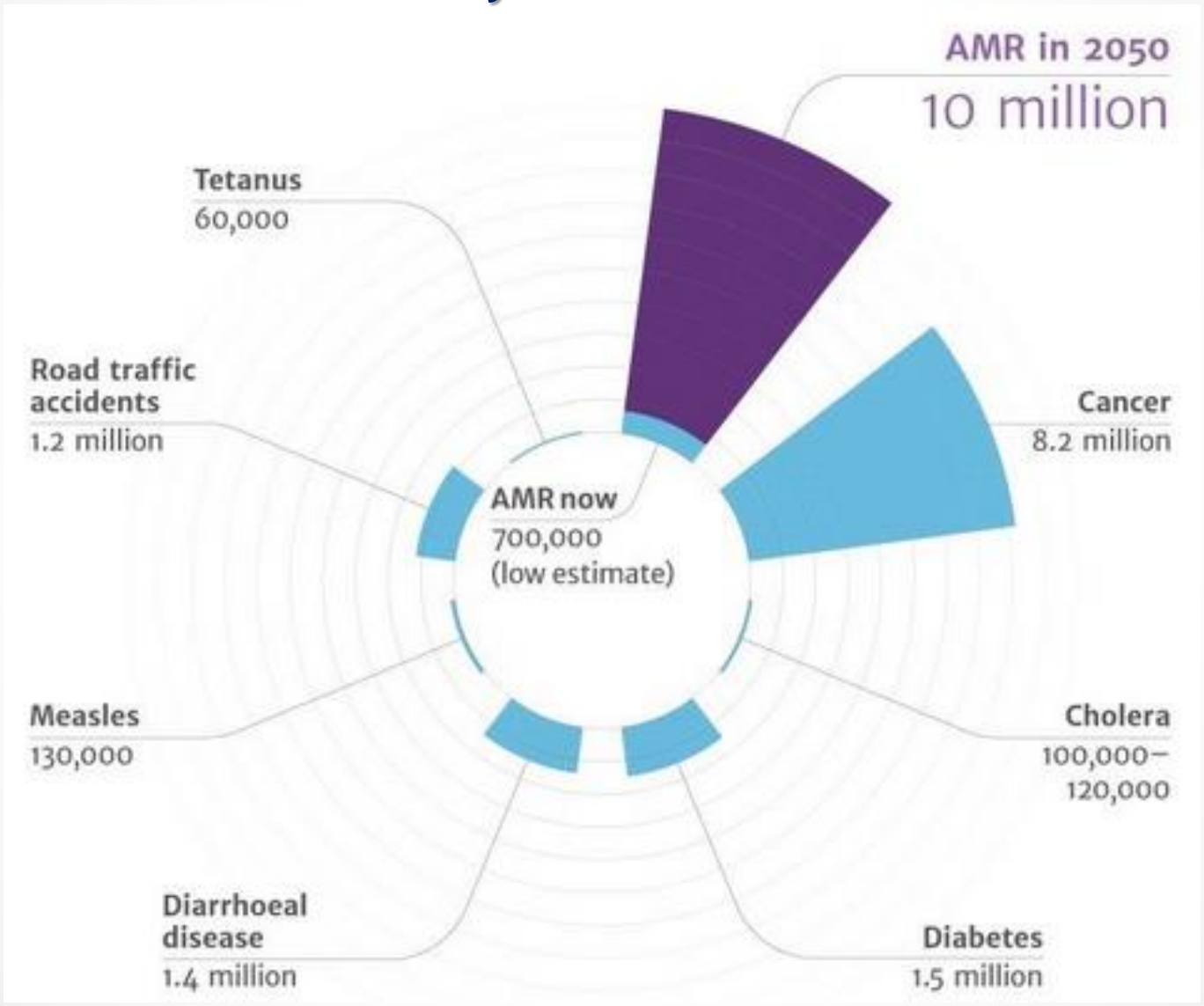
Antimicrobial use covers both human and animal usage



AMR effect on patient outcome and economic impact

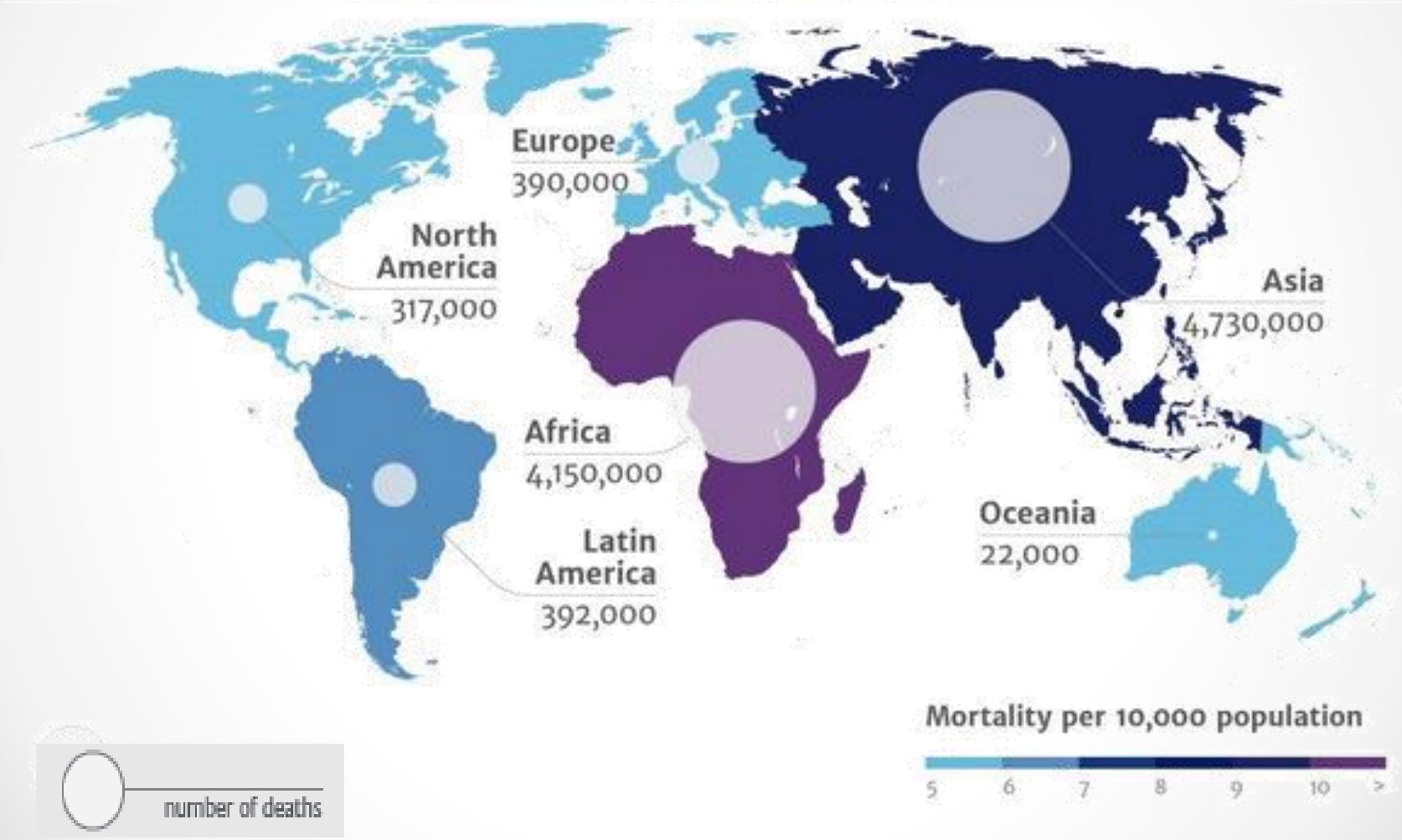
- European Union
  - 2.5 million extra hospital days in 2007
  - 25,000 deaths per year
  - Overall societal costs about 1.5 billion Euros per year
- Thailand
  - > 40,000 AMR infected patients per year
  - >30,000 deaths from blood infection
  - 2.0 billion USD per year
- USA
  - > 2,049,442 illnesses & > 23,000 deaths
  - Up to $ 20 billion direct costs
  - Up to $ 35 billion additional indirect costs

Deaths attributable to AMR every year compared to other major causes of death



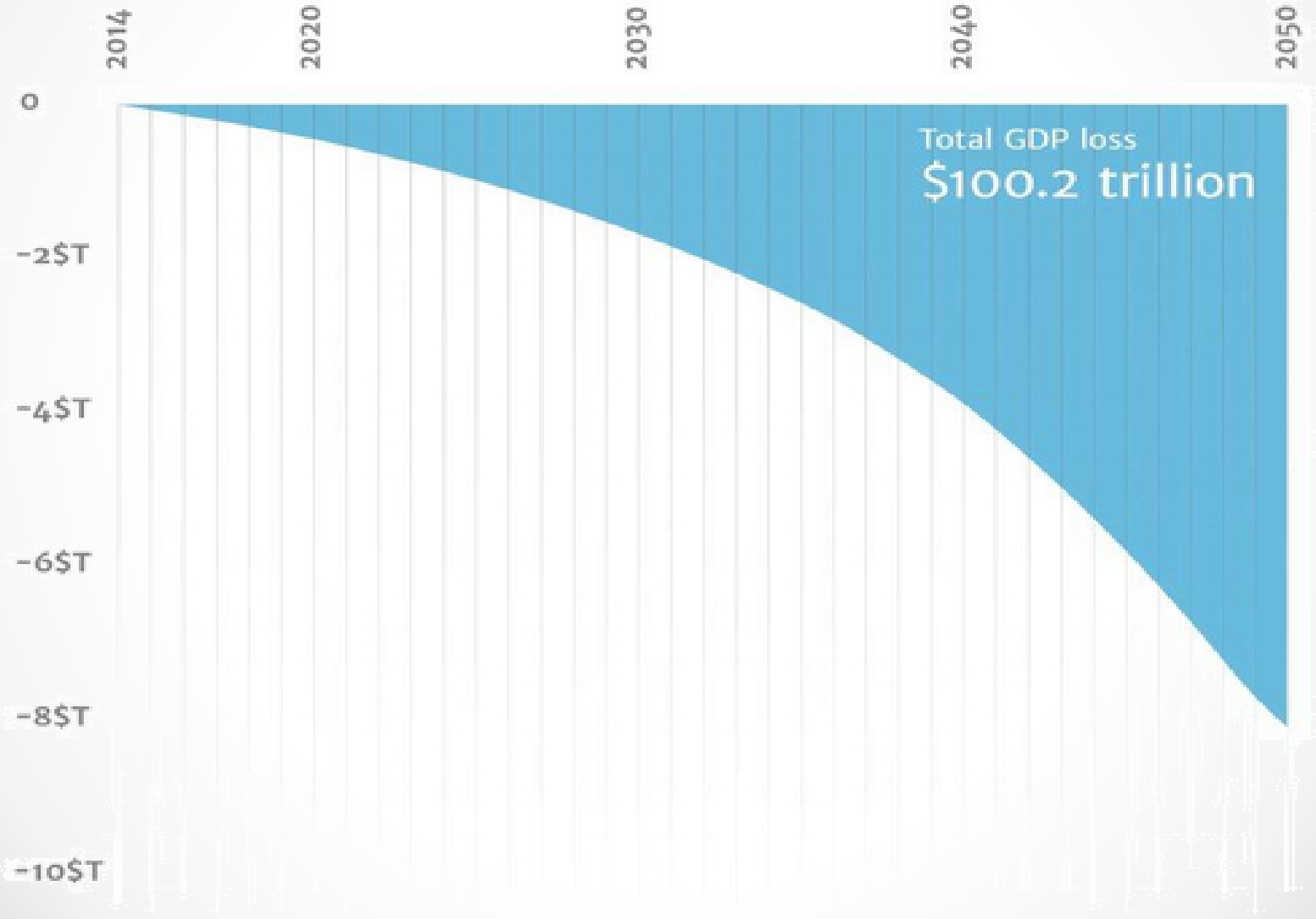
J O'Neill, Review on Antimicrobial Resistance 2014

Deaths attributable to AMR every year by 2050



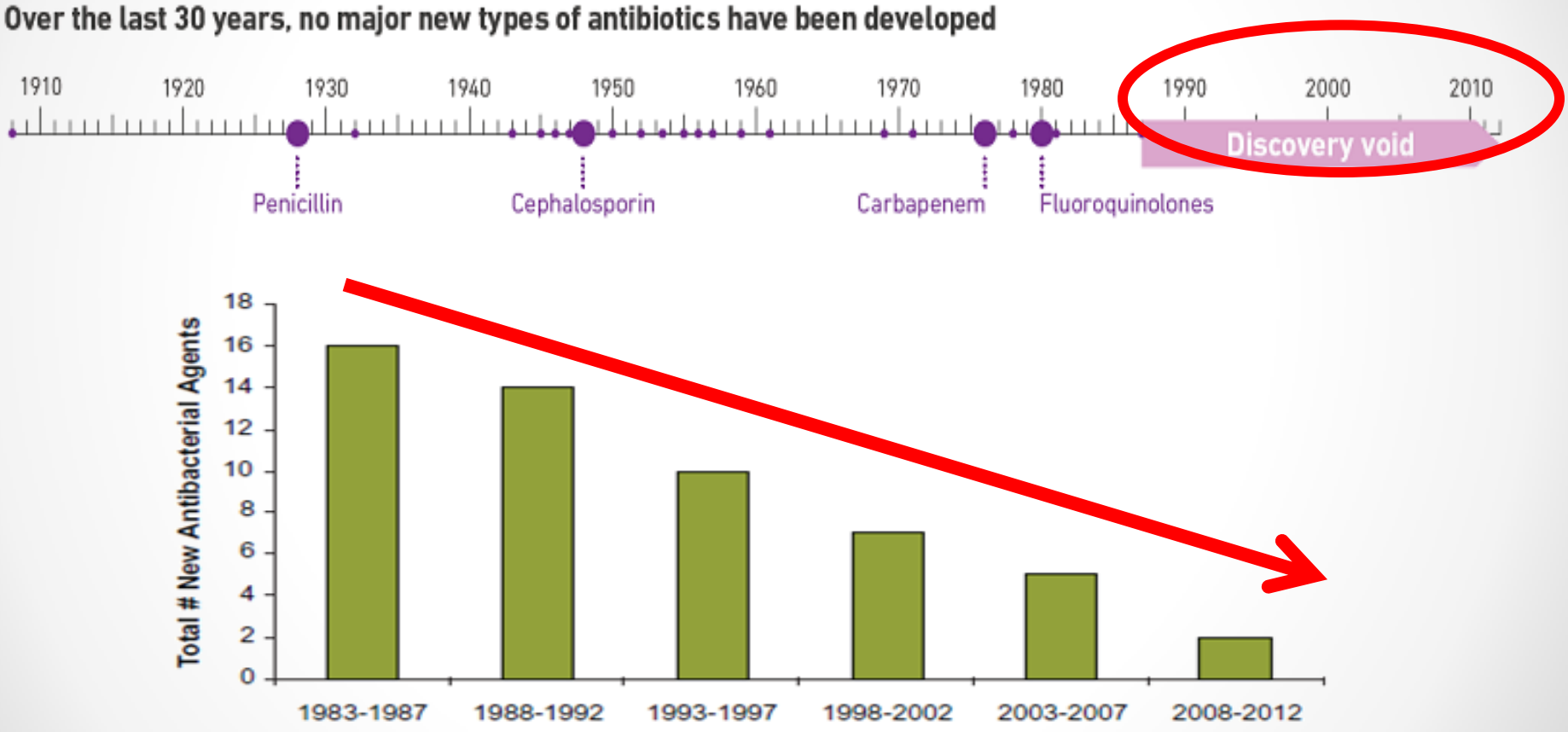
J O'Neill, Review on Antimicrobial Resistance 2014

AMR's impact on World GDP in trillions of USD

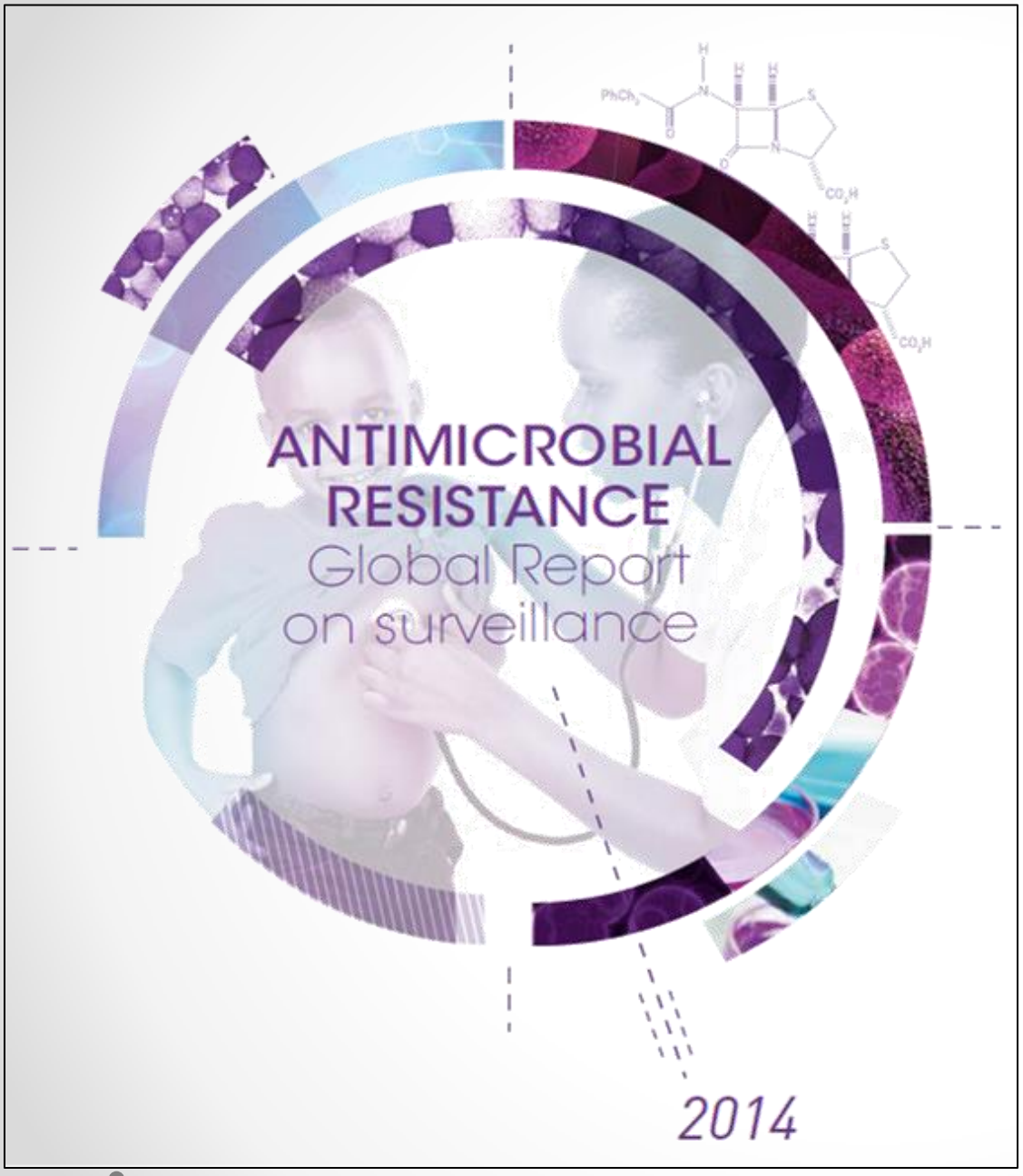


J O'Neill, Review on Antimicrobial Resistance 2014

New antibiotics are scarce



World Health Organization (2014). Antimicrobial resistance. Global report on surveillance infographic



1st report by WHO summarising globally collected data on current situation on AMR for selected pathogens

April 2014

- High proportions of resistance to common treatments reported in all regions

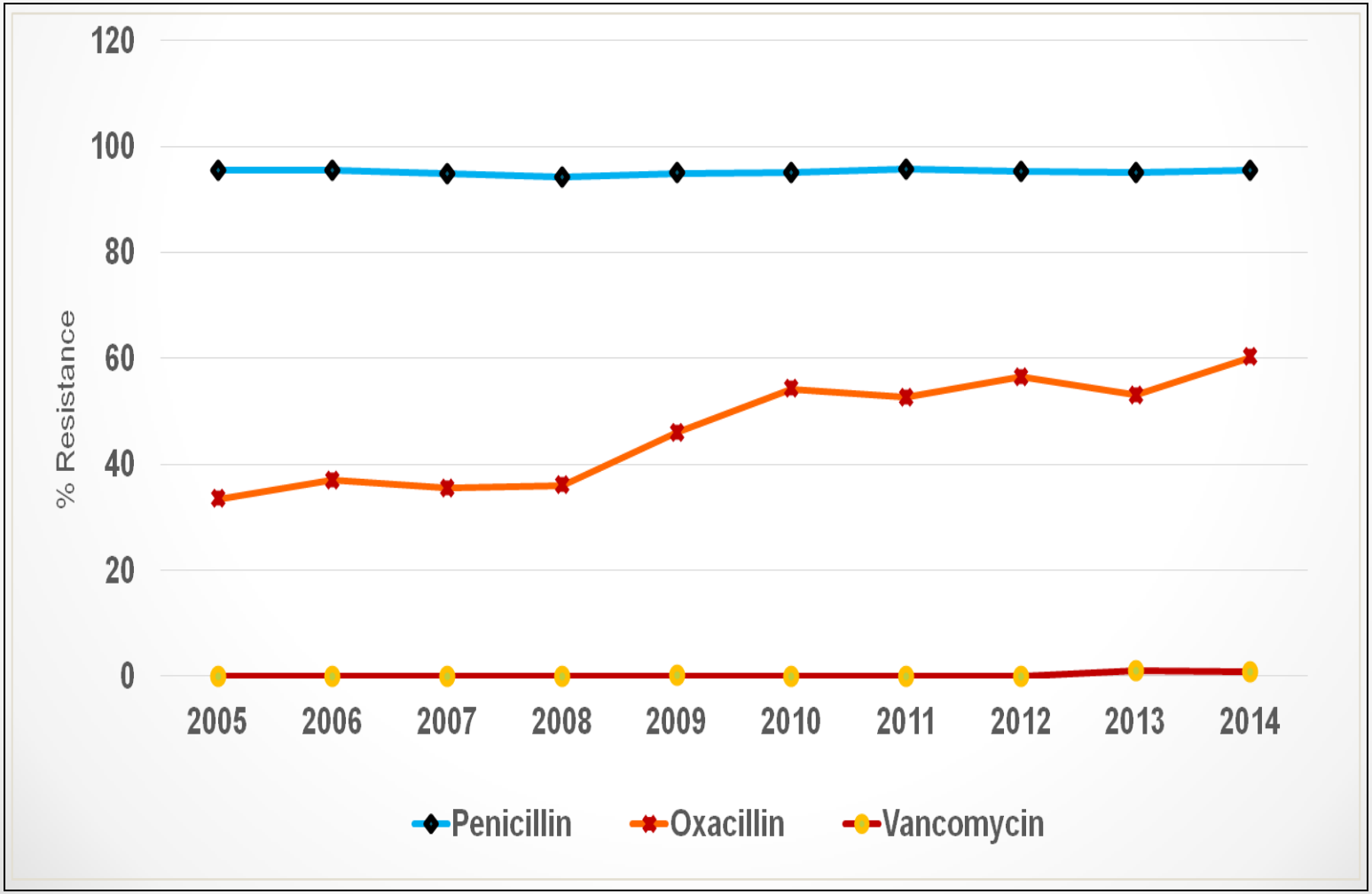
Bacteria commonly causing infections in hospitals and in the community

Name of Bacterium / Resistance	Examples of typical diseases	No. out of 194 Member States Providing Data	No. of WHO Regions with National Reports of 50% Resistance or More
Escherichia coli	Urinary tract infections, blood stream infections		
Vs. 3rd gen. cephalosporins		86	5/6
Vs. fluoroquinolones		92	5/6
Klebsiella pneumoniae	Pneumonia, blood stream infections, urinary tract infections		
Vs. 3rd gen. cephalosporins		87	6/6
Vs. carbapenems		71	2/6
Staphylococcus aureus	Wound infections, blood stream infections		
Vs. methicillin "MRSA"		85	5/6

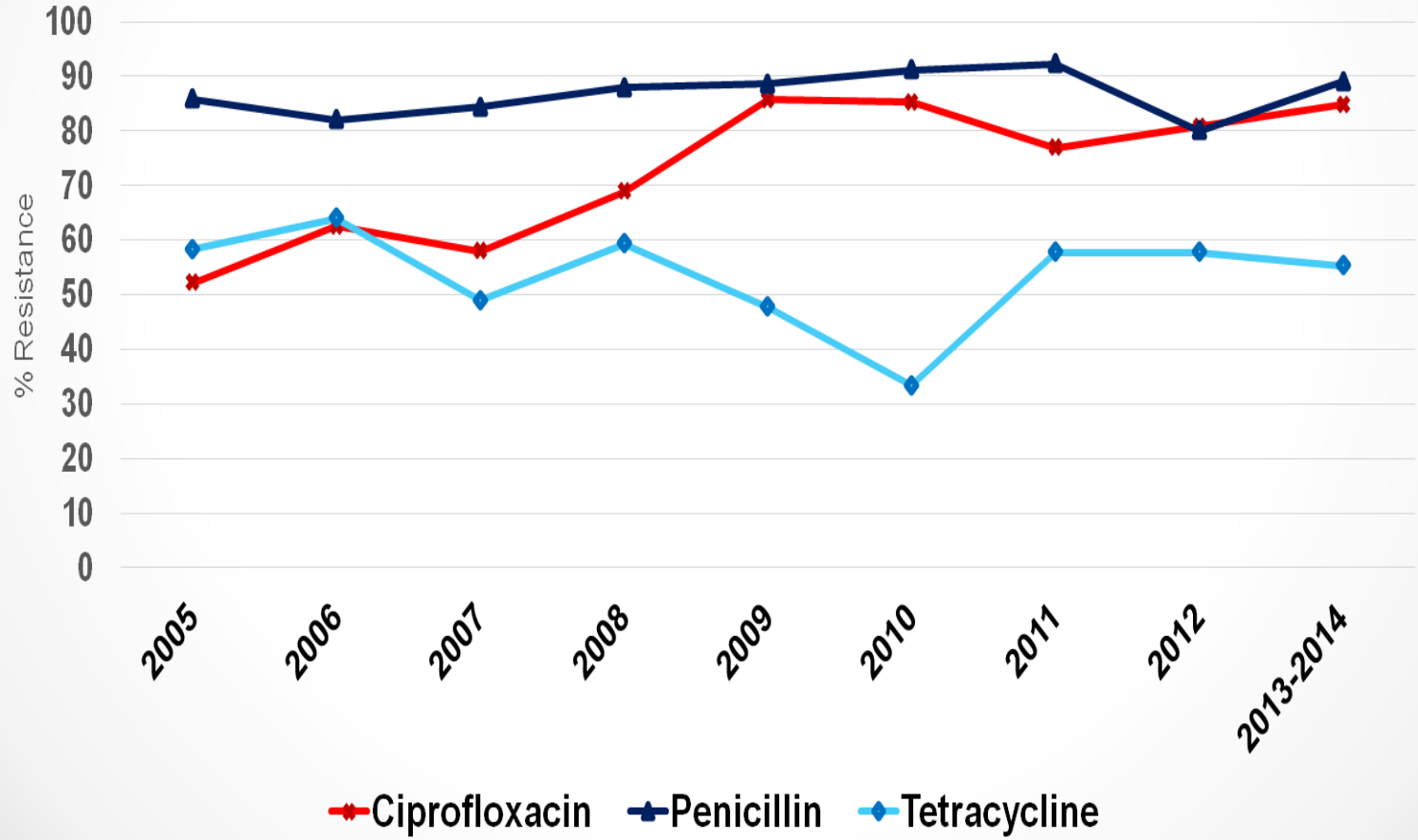
Bacteria mainly causing infections in the community

Name of Bacterium / Resistance	Examples of typical diseases	No. out of 194 Member States Providing Data	No. of WHO Regions with National Reports of 50% Resistance or More
Streptococcus pneumoniae Non-susceptible or resistant to penicillin	Pneumonia, meningitis, otitis	67	6/6
Nontyphoidal Salmonella Vs. fluoroquinolones	Foodborne diarrhea, blood stream infections	68	3/6
Shigella species Vs. fluoroquinolones	Diarrhea ("bacillary dysenteria")	35	2/6
Neisseria gonorrheae Vs. 3rd gen. cephalosporins	Gonorrhea	42	3/6

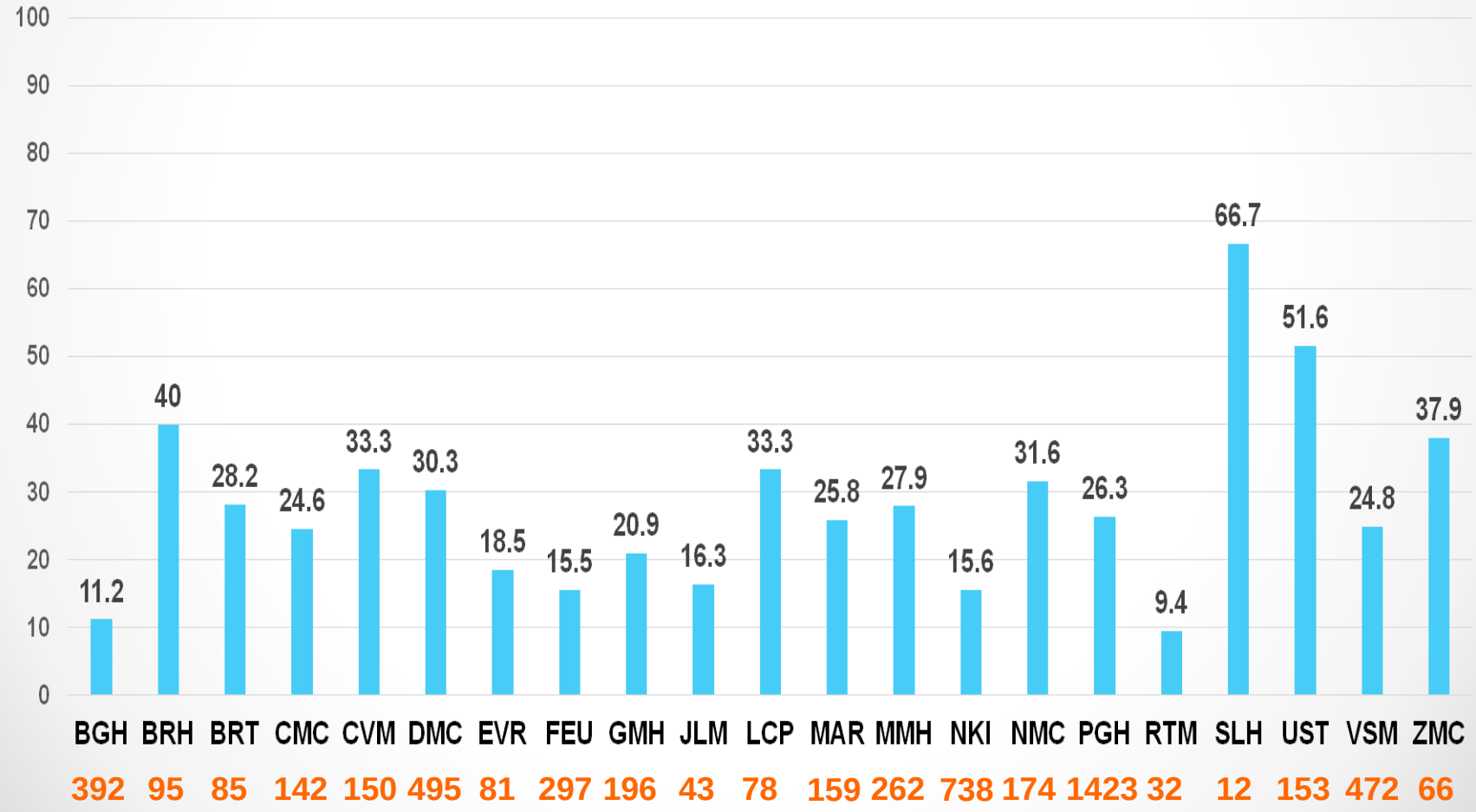
Yearly penicillin, oxacillin and vancomycin resistance rates of *Staphylococcus aureus*, ARSP, 2005-2014



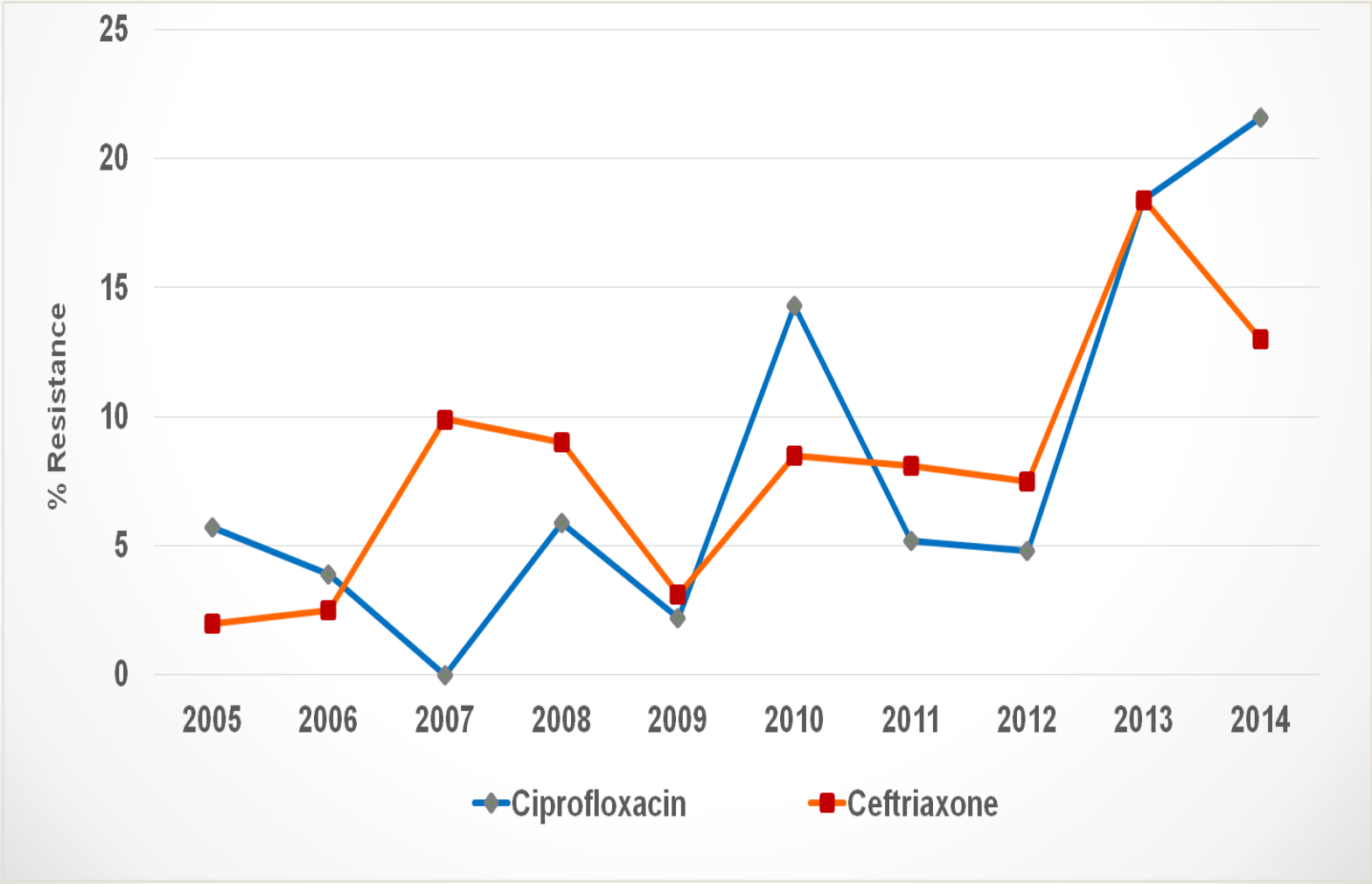
Trends of resistance for *Neisseria gonorrhoeae*, ARSP, 2005 - 2014



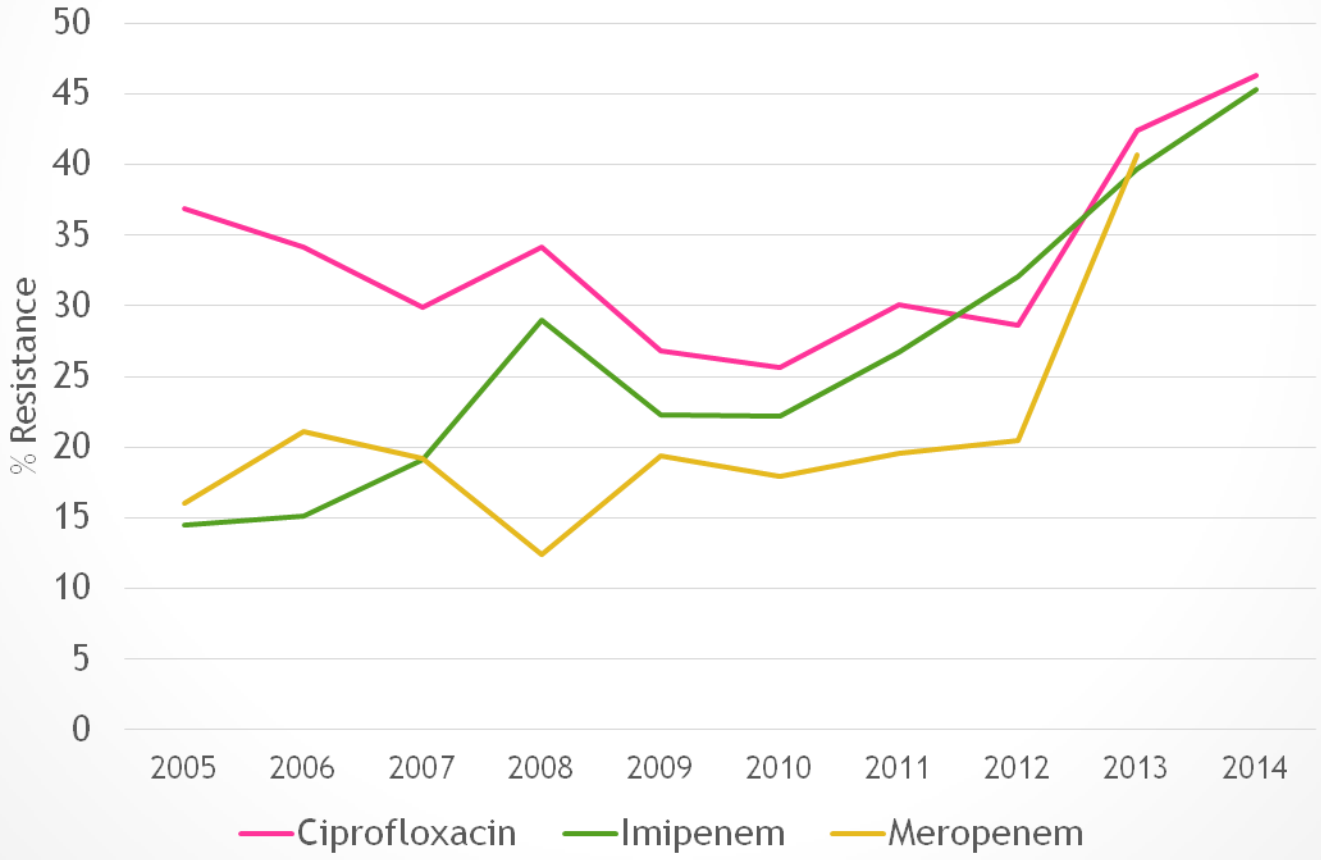
Percentage of ESBL suspect (ceftazidime resistant) *Escherichia coli*, ARSP, 2014



Yearly ciprofloxacin and ceftriaxone resistance rates of nontyphoidal *Salmonellae*, ARSP, 2005-2014



Yearly ciprofloxacin, imipenem and meropenem resistance rates of *Acinetobacter baumannii*, ARSP, 2005 - 2014

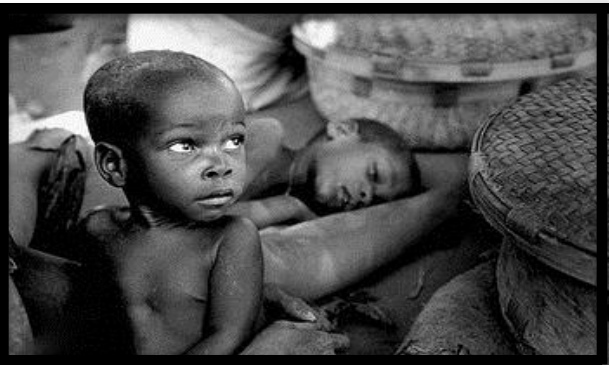


AMR as a Global Public Health threat

- AMR kills
- AMR hampers the control of infectious diseases
- AMR increases the costs of health care
- AMR jeopardizes health care gains to society
- AMR has the potential to threaten health security, and damage trade and economy

WHO fact sheet, 2011





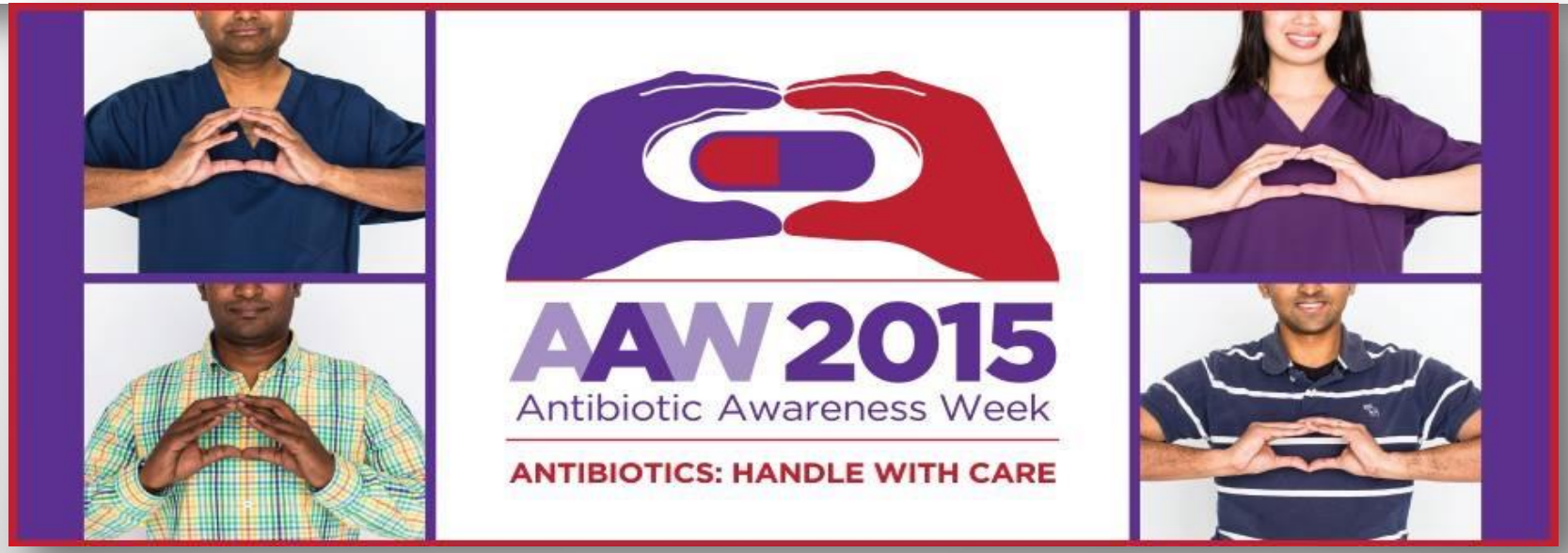
FIRST World Antibiotic Awareness Week

BE PART OF THE FIRST

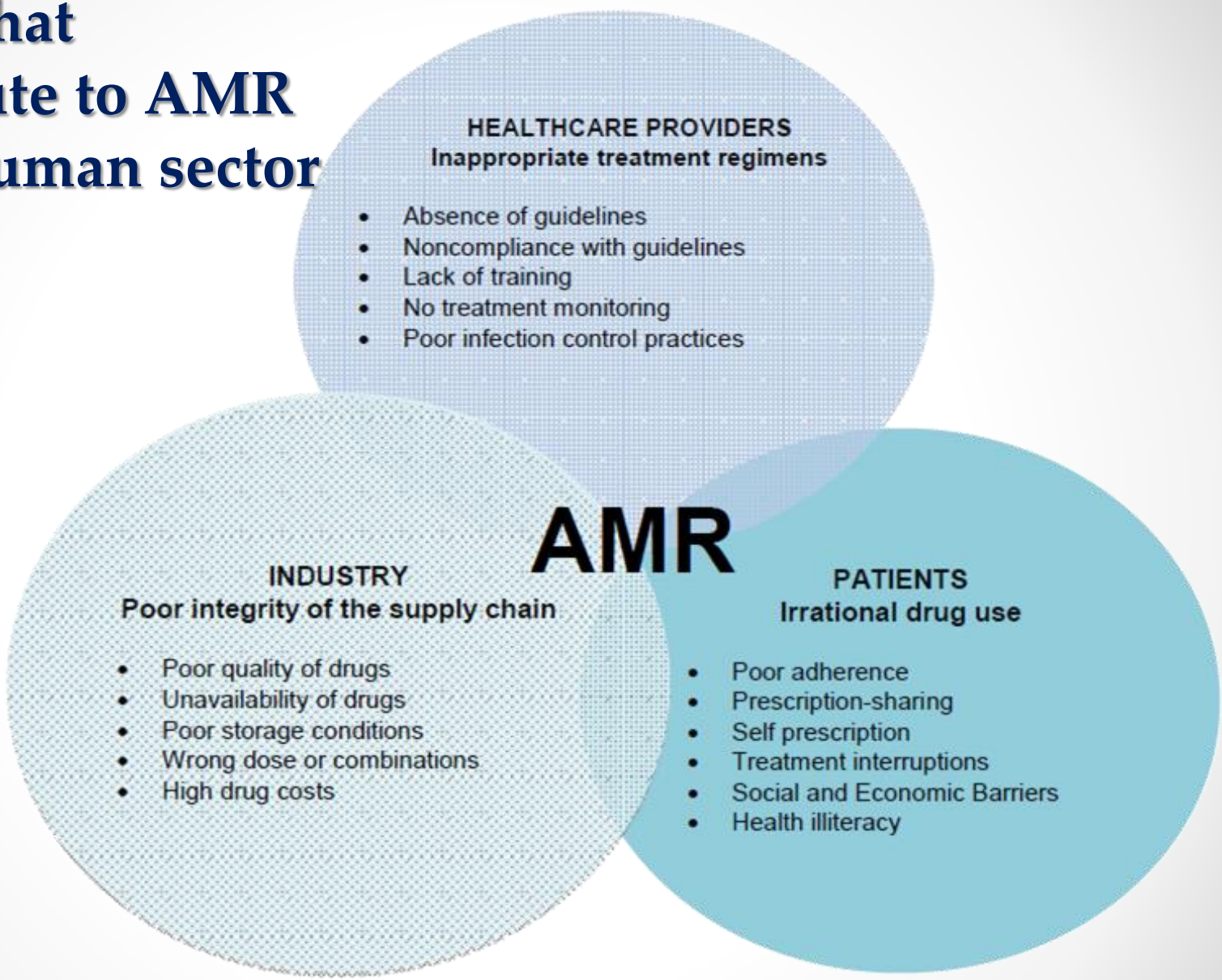
WORLD ANTIBIOTIC AWARENESS WEEK

16-22 November 2015

HANDLE ANTIBIOTICS WITH CARE



Factors that Contribute to AMR In the Human sector



WHO Six-Point Policy Package to Combat AMR

During the 62nd WHO regional Committee Meeting in October 2011, the Philippines committed to implementing the six-point policy agenda to combat AMR

Policy Areas

(1) Committing to develop a master plan to combat antimicrobial resistance

(2) Strengthening surveillance and laboratory capacity

(3) Ensuring uninterrupted access to essential medicines of assured quality

(4) Promoting rational use of medicines in patient care and animal husbandry

(5) Enhancing infection prevention and control

(6) Fostering innovations and research to develop new tools and drugs


Worldwide country situation analysis:
response to antimicrobial resistance
April 2015

KEY FINDINGS

- **Comprehensive national plan**

Only a few countries reported having a comprehensive national plan based on a multisectoral approach and with sustainable financing.

- **Laboratory capacity to undertake surveillance**

In many, poor laboratory capacity, infrastructure and data management prevented effective surveillance

- **Access to safe, effective antimicrobials**

Higher access rates in high-income countries; in regions with problems of low-quality and/or counterfeit medicines, few countries had a national regulatory authority, national standards or the capacity to enforce them

KEY FINDINGS

- **Control of misuse of antimicrobials**

  Widespread sale of antimicrobials without prescription; regulations not enforced

  No standard treatment guidelines for health care workers in many countries

  Few countries w/ a system for monitoring antimicrobial usage

- **Awareness and understanding among the general public**

  Public awareness generally low; also low in sectors of healthcare, politics, media and academia

- **Effective IPC programs**

  Less than half had a national IPC program; fewer had IPC programs in all tertiary hospitals

WHO GLOBAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE 2015

Goal

The overall goal is to ensure, for as long as possible, continuity of the ability to treat and prevent infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them.

WHO GLOBAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE 2015

Objectives

- Improve awareness and understanding of antimicrobial resistance through effective communication, education and training
- Strengthen the knowledge and evidence base through surveillance and research
- Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures

WHO GLOBAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE 2015

Objectives

- **Optimize the use of antimicrobial medicines in human and animal health**
- **Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions**

Country Situation Analysis on AMR, Philippines (2012)

1	2	3
No comprehensive national plan	Need to improve surveillance	Securing the drug supply chain
4	**5**	**6**
Need for positive changes in knowledge and practices of prescribers, dispensers and patients	Strengthen sanitation, infection control and prevention	Research on discovery and development

Administrative Order no. 42 s. 2014

*Creating an **Inter-Agency Committee** for the Formulation and Implementation of the **National Plan to Combat Antimicrobial Resistance** in the Philippines*

Administrative Order no. 42 s. 2014

*Creating an **Inter-Agency Committee** for the Formulation and Implementation of the **National Plan to Combat Antimicrobial Resistance** in the Philippines*

- **ICAMR**

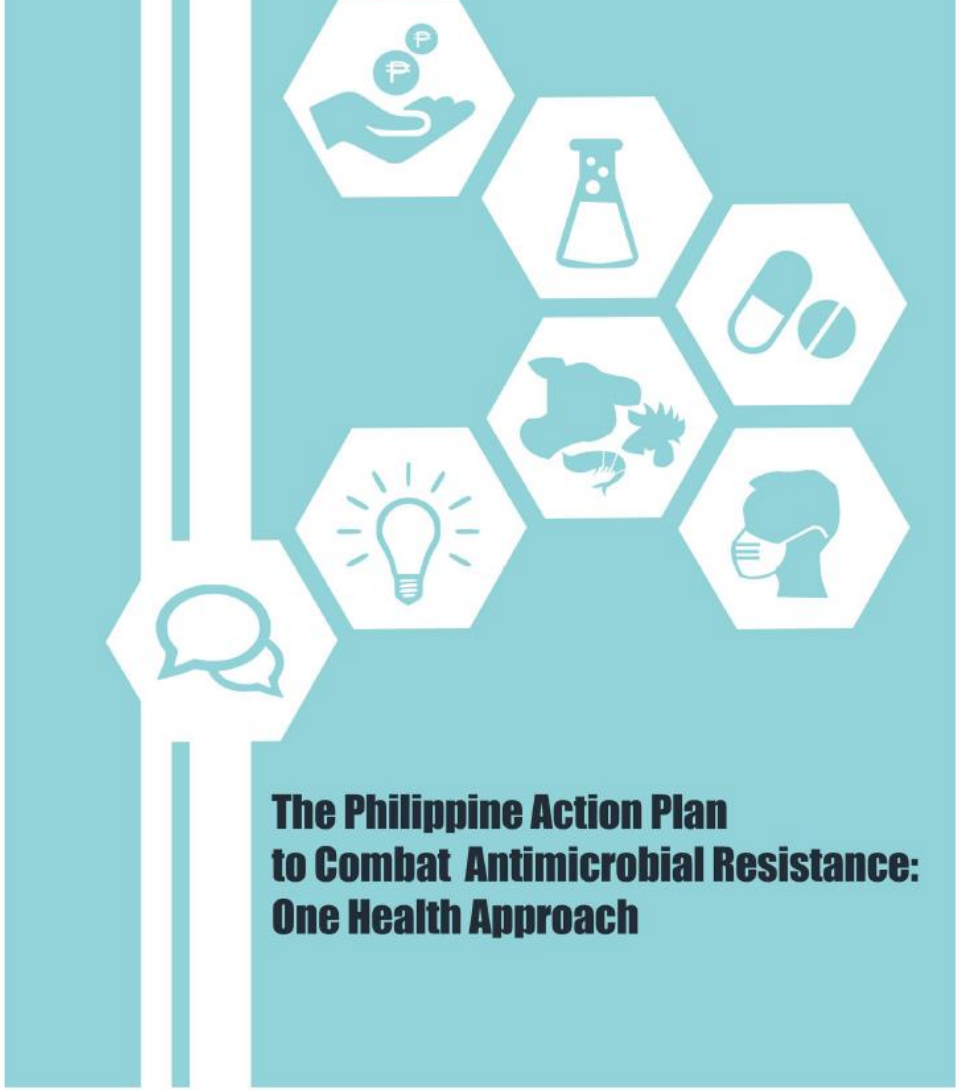
  Co-Chairs: **Department of Health**

  Department of Agriculture

  Members: **Department of Science and Technology**

  Department of Interior and Local Government

  Department of Trade and Industry



The Philippine Action Plan to Combat Antimicrobial Resistance: One Health Approach

Philippine Action Plan to Combat AMR: One Health Approach

- **3-year comprehensive plan**
- **Emphasis on "One Health Strategy"**
  - **The causation of AMR is inter-related and inter-sectoral thereby requiring collaborative multidisciplinary work at local, national, and global levels to attain optimal health for humans, animals and the environment**

Philippine Action Plan to Combat AMR: One Health Approach

Vision

A nation protected against the threats of antimicrobial resistance

Mission

To implement an integrated, comprehensive and sustainable national program to combat AMR geared towards safeguarding human and animal health while preventing interference in the agricultural, food, trade, communication and environmental sectors

Philippine Action Plan to Combat AMR: One Health Approach

Philippine Targets to Combat Antimicrobial Resistance

By 2020, the Philippines will:

1. Reduce by 30% carbapenem-resistant Enterobacteriaceae (E. coli and Klebsiella) infections acquired during hospitalization
2. Maintain the prevalence of ceftriaxone-resistant Neisseria gonorrhoeae to 0%
3. Reduce by at least 30% overall methicillin resistance in Staphylococcus aureus bloodstream infections compared to rates in 2014
4. Reduce by 30% multidrug-resistant Pseudomonas spp infections acquired during hospitalization compared to estimates in 2014
5. Reduce by 25% ciprofloxacin-resistant non-typhoidal salmonella infections compared to 2014

Philippine Action Plan to Combat AMR: Key Strategies

1. Commit to a comprehensive, financed national plan with accountability and civil society engagement
2. Strengthen surveillance and laboratory capacity
3. Ensure uninterrupted access to essential medicines of assured quality
4. Regulate and promote rational use of medicines in the human and animal health sectors and ensure proper patient care
5. Enhance infection prevention and control across all settings
6. Foster innovations and research and development
7. Development of a Risk Communication Plan to combat AMR

Key Strategy 01: Commit to a Comprehensive, Financed National Plan with Accountability and Civil Society Engagement

Objectives (Human and Animal Health)

1. **To forge a joint action plan and agreement among national agencies**
2. **To generate resources and enhance internal/external networking**

Launch of Phil Action Plan during First AMR Summit, November 24-25, 2015

Key Strategy 02: Strengthen Surveillance and Laboratory Capacity

Objectives (Human Health)

1. To improve surveillance capacity of health personnel, hospitals and laboratories
   - Assessment and inventory
   - Training
   - Management of the Nat'l. Health Lab Referral Network (gov't. & private labs)
   - Implementation of HAI surveillance in hospitals
   - Expansion of ARSP to other DOH-retained hospitals

Key Strategy 02: Strengthen Surveillance and Laboratory Capacity

Objectives (Human Health)

2. To develop programs and systems for surveillance and monitoring of AMR
   - Antimicrobial use surveillance (AMU) system
   - Integrated system for AMR, AMU and HAI
   - IT platform

Key Strategy 03: Ensure uninterrupted access to essential medicines of assured quality

Objectives (Human Health)

1. To improve the registration, marketing authorization and post marketing surveillance of antimicrobials
   - **Monitoring quality of registered antimicrobials**
   - **<u>Streamlining review/release of marketing authorization of antibiotics for priority infections</u>**
   - **Forging an agreement on regulatory control over drugs used in aqua culture**
   - **Rationalization and harmonization of regulatory control over manufacture/use of antibiotics in animals**

Key Strategy 03: Ensure uninterrupted access to essential medicines of assured quality

Objectives (Human Health)

2. To ensure access to essential medicines
   - **Strict enforcement of regulations on antibiotic prescription, dispensing and use**
   - **Review of issuances on access to antimicrobials**
   - **Partnerships with HC professionals, orgs, consumer group**

Key Strategy 04: Regulate and promote the rational use of medicines in the human and animal health sectors

Objectives (Human Health)

- Strict regulation of promotion and marketing
- Philippine Practice Standards for Pharmacists in relation to Rational Dispensing of Antimicrobials
- National Antibiotic Guidelines dev't./implementation
- Antimicrobial Stewardship Program in Hospitals

Key Strategy 04: Regulate and promote the rational use of medicines in the human and animal health sectors

Objectives (Human Health)

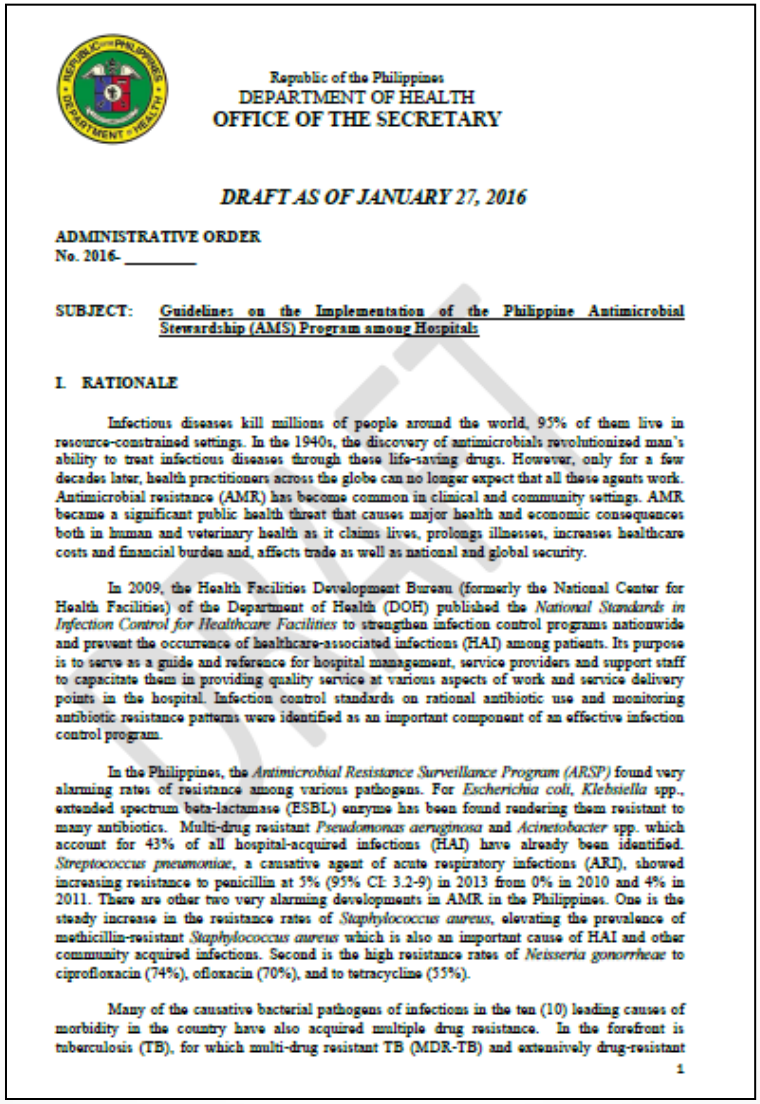
- **Inclusion of RUM principles in educational curricula**
- **Training/Dissemination of National Treatment Guidelines**
- **Coordination meetings and workshops with local government on policies implementation**

DOH AMS action planning: Interactive workshops

Five essential strategies

- **implementing clinical guidelines**
- **establishing formulary restrictions**
- **reviewing antimicrobial prescribing with intervention and direct feedback**
- **monitoring performance**
- **ensure selective reporting of susceptibility testing results.**

Draft Administrative Order on AMS



Republic of the Philippines
DEPARTMENT OF HEALTH
OFFICE OF THE SECRETARY

DRAFT AS OF JANUARY 27, 2016

ADMINISTRATIVE ORDER
No. 2016- _____

SUBJECT: **Guidelines on the Implementation of the Philippine Antimicrobial Stewardship (AMS) Program among Hospitals**

I. RATIONALE

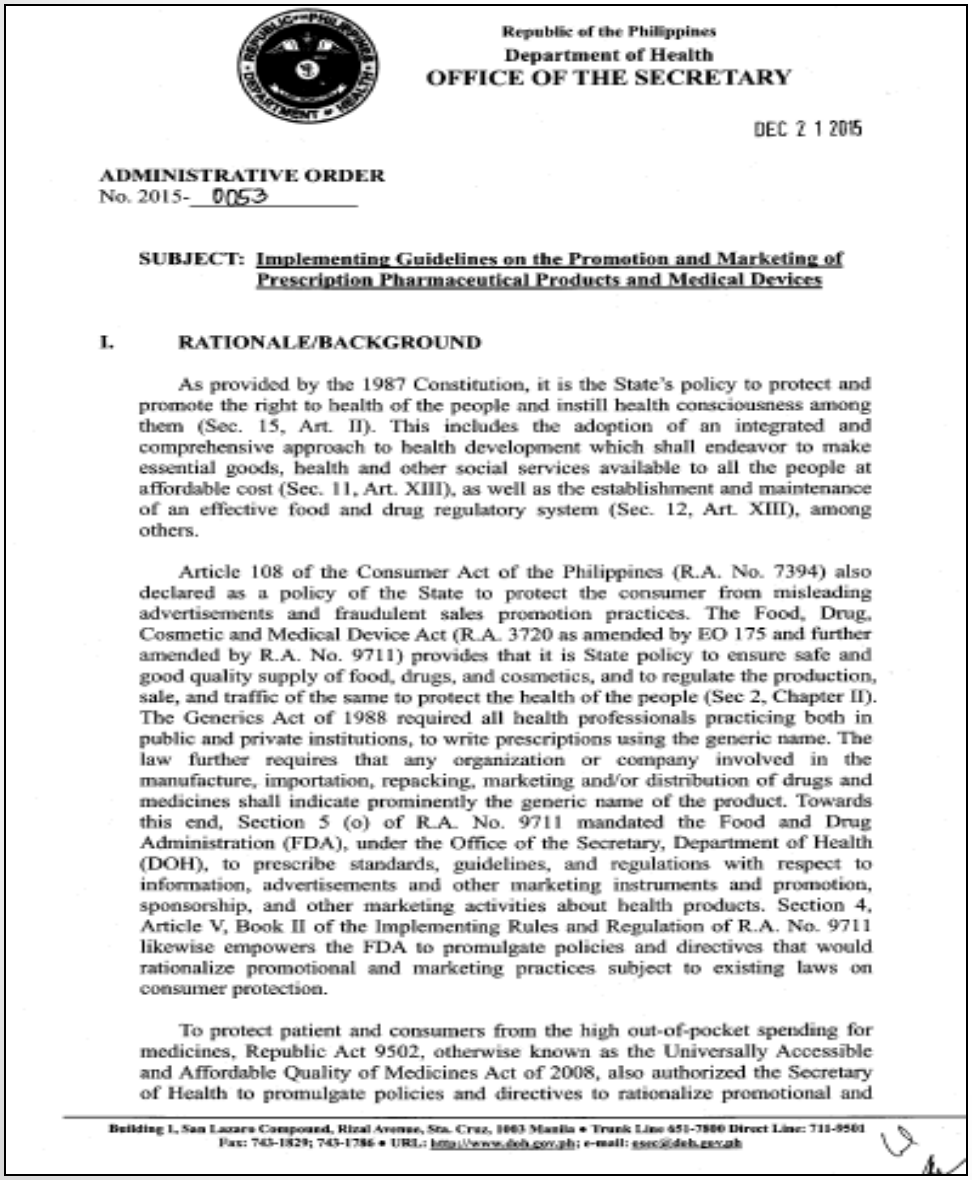
Infectious diseases kill millions of people around the world, 95% of them live in resource-constrained settings. In the 1940s, the discovery of antimicrobials revolutionized man's ability to treat infectious diseases through these life-saving drugs. However, only for a few decades later, health practitioners across the globe can no longer expect that all these agents work. Antimicrobial resistance (AMR) has become common in clinical and community settings. AMR became a significant public health threat that causes major health and economic consequences both in human and veterinary health as it claims lives, prolongs illnesses, increases healthcare costs and financial burden and, affects trade as well as national and global security.

In 2009, the Health Facilities Development Bureau (formerly the National Center for Health Facilities) of the Department of Health (DOH) published the *National Standards in Infection Control for Healthcare Facilities* to strengthen infection control programs nationwide and prevent the occurrence of healthcare-associated infections (HAI) among patients. Its purpose is to serve as a guide and reference for hospital management, service providers and support staff to capacitate them in providing quality service at various aspects of work and service delivery points in the hospital. Infection control standards on rational antibiotic use and monitoring antibiotic resistance patterns were identified as an important component of an effective infection control program.

In the Philippines, the *Antimicrobial Resistance Surveillance Program (ARSP)* found very alarming rates of resistance among various pathogens. For *Escherichia coli*, *Klebsiella* spp., extended spectrum beta-lactamase (ESBL) enzyme has been found rendering them resistant to many antibiotics. Multi-drug resistant *Pseudomonas aeruginosa* and *Acinetobacter* spp. which account for 43% of all hospital-acquired infections (HAI) have already been identified. *Streptococcus pneumoniae*, a causative agent of acute respiratory infections (ARI), showed increasing resistance to penicillin at 5% (95% CI: 3.2-9) in 2013 from 0% in 2010 and 4% in 2011. There are other two very alarming developments in AMR in the Philippines. One is the steady increase in the resistance rates of *Staphylococcus aureus*, elevating the prevalence of methicillin-resistant *Staphylococcus aureus* which is also an important cause of HAI and other community acquired infections. Second is the high resistance rates of *Neisseria gonorrheae* to ciprofloxacin (74%), ofloxacin (70%), and to tetracycline (55%).

Many of the causative bacterial pathogens of infections in the ten (10) leading causes of morbidity in the country have also acquired multiple drug resistance. In the forefront is tuberculosis (TB), for which multi-drug resistant TB (MDR-TB) and extensively drug-resistant

AO on Pharmaceutical promotion



Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

DEC 2 1 2015

ADMINISTRATIVE ORDER
No. 2015- 0053

SUBJECT: Implementing Guidelines on the Promotion and Marketing of Prescription Pharmaceutical Products and Medical Devices

I. RATIONALE/BACKGROUND

As provided by the 1987 Constitution, it is the State's policy to protect and promote the right to health of the people and instill health consciousness among them (Sec. 15, Art. II). This includes the adoption of an integrated and comprehensive approach to health development which shall endeavor to make essential goods, health and other social services available to all the people at affordable cost (Sec. 11, Art. XIII), as well as the establishment and maintenance of an effective food and drug regulatory system (Sec. 12, Art. XIII), among others.

Article 108 of the Consumer Act of the Philippines (R.A. No. 7394) also declared as a policy of the State to protect the consumer from misleading advertisements and fraudulent sales promotion practices. The Food, Drug, Cosmetic and Medical Device Act (R.A. 3720 as amended by EO 175 and further amended by R.A. No. 9711) provides that it is State policy to ensure safe and good quality supply of food, drugs, and cosmetics, and to regulate the production, sale, and traffic of the same to protect the health of the people (Sec 2, Chapter II). The Generics Act of 1988 required all health professionals practicing both in public and private institutions, to write prescriptions using the generic name. The law further requires that any organization or company involved in the manufacture, importation, repacking, marketing and/or distribution of drugs and medicines shall indicate prominently the generic name of the product. Towards this end, Section 5 (o) of R.A. No. 9711 mandated the Food and Drug Administration (FDA), under the Office of the Secretary, Department of Health (DOH), to prescribe standards, guidelines, and regulations with respect to information, advertisements and other marketing instruments and promotion, sponsorship, and other marketing activities about health products. Section 4, Article V, Book II of the Implementing Rules and Regulation of R.A. No. 9711 likewise empowers the FDA to promulgate policies and directives that would rationalize promotional and marketing practices subject to existing laws on consumer protection.

To protect patient and consumers from the high out-of-pocket spending for medicines, Republic Act 9502, otherwise known as the Universally Accessible and Affordable Quality of Medicines Act of 2008, also authorized the Secretary of Health to promulgate policies and directives to rationalize promotional and

Building I, San Lazaro Compound, Rizal Avenue, Sta. Cruz, 1003 Manila • Trunk Line 651-7800 Direct Line: 711-9501
Fax: 743-1829; 743-1786 • URL: http://www.doh.gov.ph; e-mail: osec@doh.gov.ph

Specific Objective: To prescribe standards, guidelines, and regulations with respect to information dissemination, advertisements, promotion, sponsorship, and other marketing activities and instruments about prescription pharmaceutical products and medical devices with the end goal of improving and promoting their rational use, and safeguarding patient rights and welfare.

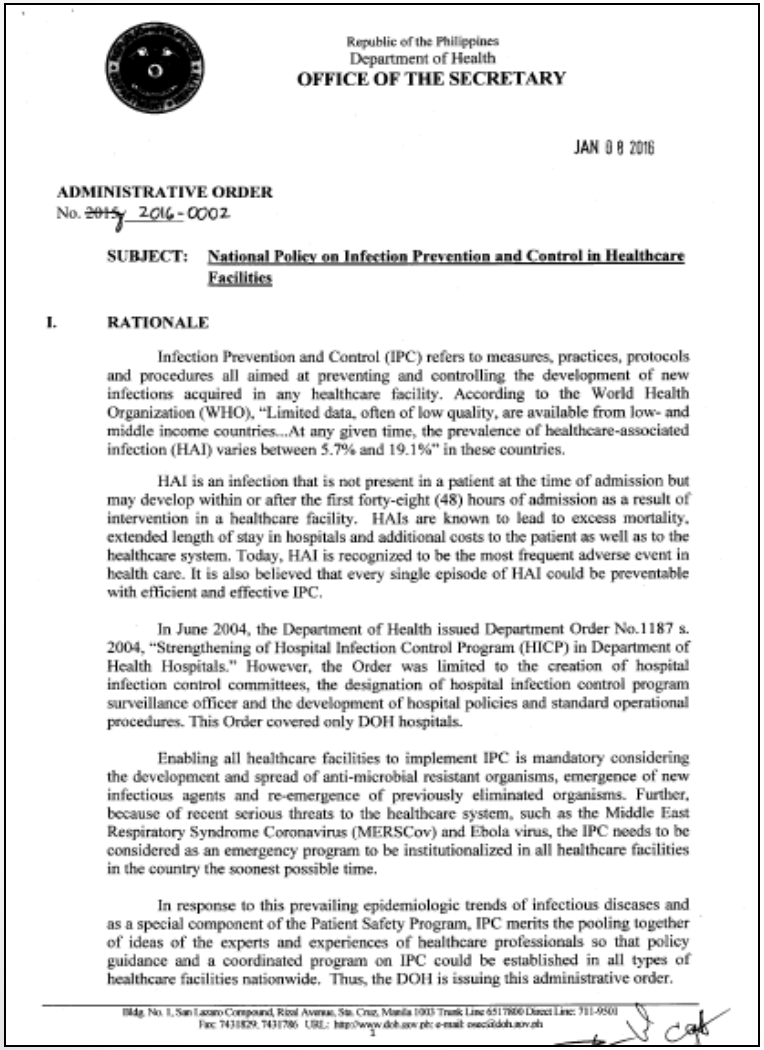
Takes effect 15 days after publication
In 2 newspapers of natl circulation.

Key Strategy 05: Enhance infection prevention and control across all settings

Objectives (Human Health)

1. Improve capacity of health personnel and community
   - Dev't. of National Policy on IPC
   - IPC promotion and education in the community
   - Training of hospital personnel
2. Implement and monitor programs on IPC

Administrative Order on Infection control



Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

JAN 0 8 2016

ADMINISTRATIVE ORDER
No. ~~2015~~ 2016 - 0002

SUBJECT: **National Policy on Infection Prevention and Control in Healthcare Facilities**

I. RATIONALE

Infection Prevention and Control (IPC) refers to measures, practices, protocols and procedures all aimed at preventing and controlling the development of new infections acquired in any healthcare facility. According to the World Health Organization (WHO), "Limited data, often of low quality, are available from low- and middle income countries....At any given time, the prevalence of healthcare-associated infection (HAI) varies between 5.7% and 19.1%" in these countries.

HAI is an infection that is not present in a patient at the time of admission but may develop within or after the first forty-eight (48) hours of admission as a result of intervention in a healthcare facility. HAIs are known to lead to excess mortality, extended length of stay in hospitals and additional costs to the patient as well as to the healthcare system. Today, HAI is recognized to be the most frequent adverse event in health care. It is also believed that every single episode of HAI could be preventable with efficient and effective IPC.

In June 2004, the Department of Health issued Department Order No.1187 s. 2004, "Strengthening of Hospital Infection Control Program (HICP) in Department of Health Hospitals." However, the Order was limited to the creation of hospital infection control committees, the designation of hospital infection control program surveillance officer and the development of hospital policies and standard operational procedures. This Order covered only DOH hospitals.

Enabling all healthcare facilities to implement IPC is mandatory considering the development and spread of anti-microbial resistant organisms, emergence of new infectious agents and re-emergence of previously eliminated organisms. Further, because of recent serious threats to the healthcare system, such as the Middle East Respiratory Syndrome Coronavirus (MERSCov) and Ebola virus, the IPC needs to be considered as an emergency program to be institutionalized in all healthcare facilities in the country the soonest possible time.

In response to this prevailing epidemiologic trends of infectious diseases and as a special component of the Patient Safety Program, IPC merits the pooling together of ideas of the experts and experiences of healthcare professionals so that policy guidance and a coordinated program on IPC could be established in all types of healthcare facilities nationwide. Thus, the DOH is issuing this administrative order.

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Fax: 7431829, 7431786 URL: http://www.doh.gov.ph; e-mail: osec@doh.gov.ph

General objective: To provide guidance for the establishment and effective implementation of the core components of Infection Prevention and Control in healthcare facilities.

The AO takes effect immediately

Key Strategy 06: Foster innovations, research and development

Objectives (Human Health)

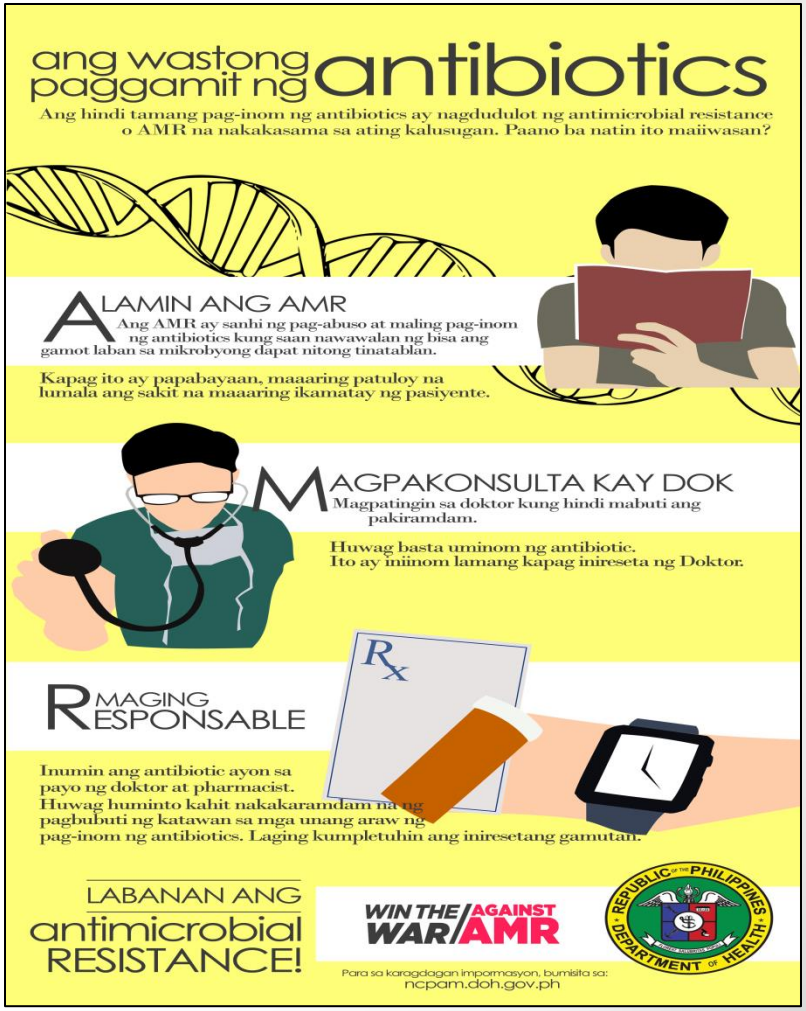
1. Prioritize AMR in fields of research
   - Inclusion of AMR in NUHRA and eHealth development plan
   - Develop AMR research agenda
   - Provide incentive and funding for innovators
2. Disseminate scientific information relevant to AMR

Key Strategy 07: Development of a risk communication plan to combat AMR

Objectives (Human Health)

1. To develop a targeted risk communication plan in AMR
   - Risk communication plan
   - IEC materials
   - Advocacy
   - AO for AMR Awareness Month

Examples of IEC Materials developed by ICAMR



THE CENTRAL ROLE OF DOCTORS (specially ID doctors) IN ANTIBIOTIC STEWARDSHIP

Slides courtesy of Regina Berba MD

1) Every DOCTOR is a PRESCRIBER: Individually an integral part of the Solution

CHALLENGES WHICH NEED TO BE ADDRESSED:

- Inappropriate use when not indicated
- Broad spectrum
- Unnecessary prolonged duration
- Wrong dosing
- Wrong drug
- No de-escalation
- No microbiologic studies/cultures

ANTIBIOTIC RESISTANCE

HANDLE ANTIBIOTICS WITH CARE

Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause. This is compromising our ability to treat infectious diseases and undermining many advances in medicine.

We must handle antibiotics with care so they remain effective for as long as possible.

WHAT HEALTH WORKERS CAN DO

1. **Prevent infections** by ensuring your hands, instruments and environment are clean
2. Keep your patients' **vaccinations** up to date
3. If you think a patient might need antibiotics, where possible, **test to confirm** and find out which one
4. Only prescribe and dispense antibiotics when they are **truly needed**
5. Prescribe and dispense the **right antibiotic at the right dose for the right duration**

www.who.int/drugresistance

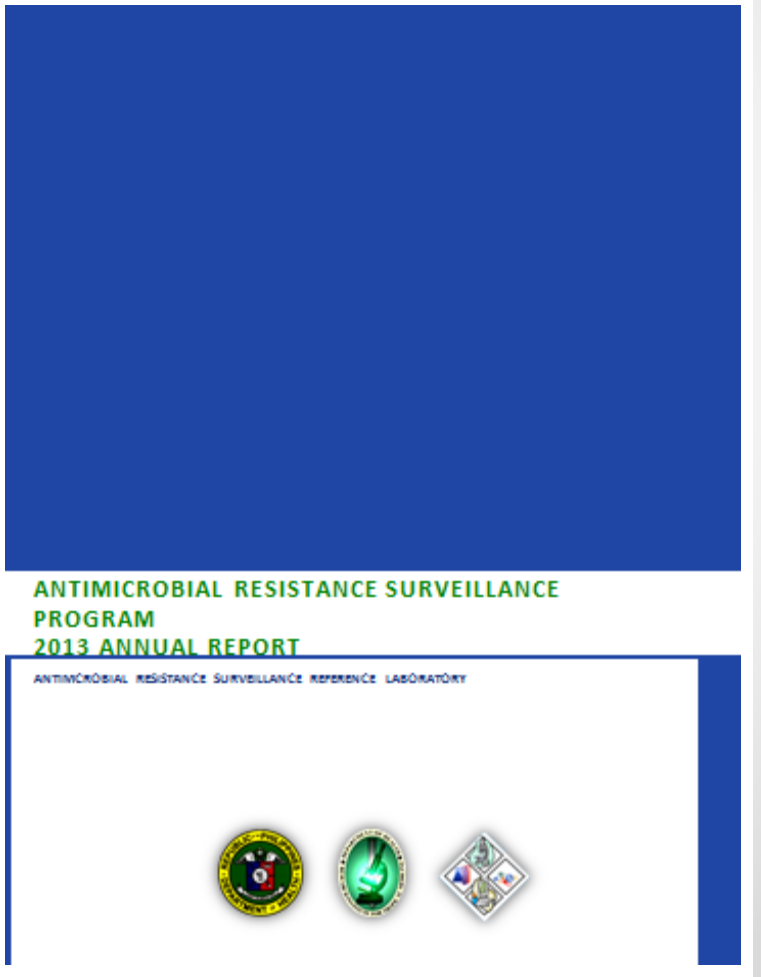
#AntibioticResistance

World Health Organization

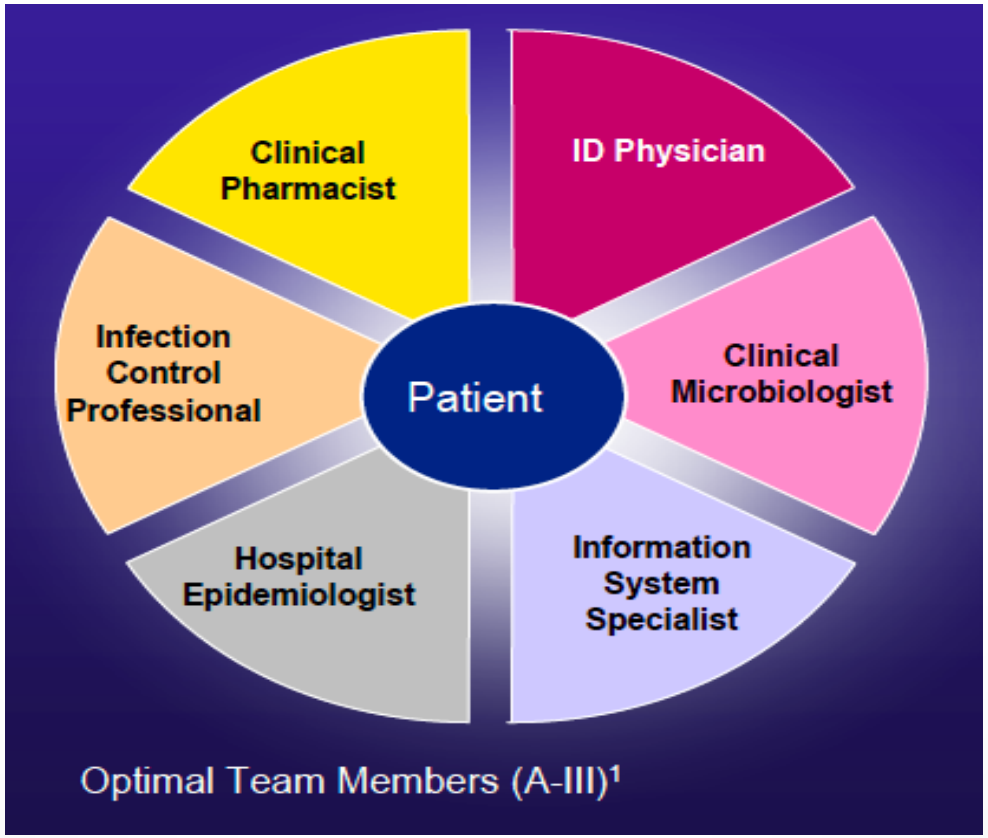
2) DOCTORS: Significant coach of patients towards prudent antibiotic use

- Pervasive practice of self-medication, and purchase of antimicrobials without doctor's prescription
- Patients and caregivers generally consider antibiotics to be relatively risk-free and are often not troubled by considerations of under treatment or development of resistant organisms
- Widespread self-treatment often with the *least effective agent in an incorrect dosage*
- Local practice of recycling prescriptions and prescription sharing among friends, neighbours and relatives.
- Widespread lack of patient awareness that drug regimens should be completed

3) ID DOCTORS LEAD HOSPITAL RESPONSE to AMR PROBLEM



The Antibiotic Stewardship Programs of Hospitals will be driven by ID DOCTORS



Dellit TH et al. *Clin Infect Dis* 2007;44(2):159-77.

4) ID DOCTORS THRU PROFESSIONAL SOCIETIES DEVELOP GUIDELINES

- UTI
- PNEUMONIA
- TUBERCULOSIS
- HIV
- TYPHOID FEVER
- LEPTOSPIROSIS
- SURGICAL PROPHYLAXIS

5) ID DOCTORS HAVE KEY ROLE IN TEACHING OTHER DOCTORS

6) DOCTORS as RESEARCHERS help look for innovative solutions to address AMR

Take home message: **Every doctor** should do his share to:

Acknowledgements

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