



# ANTIBIOTIC RESISTANCE

FROM RESEARCH TO ACTION

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## Antibiotic Prescribing for Adults and Children with Pneumonia in the Philippines: Results of the 2017 Global PPS

Mari Rose A. De los Reyes<sup>1</sup>, Ann Versporten<sup>2</sup>, Herman  
Goossens<sup>2</sup>

<sup>1</sup>Research Institute for Tropical Medicine <sup>2</sup>University  
of Antwerp

# Background Information

- Antimicrobial resistance is a serious global threat
- In the Phil. antimicrobial resistance to microorganisms causing pneumonia is increasing.
- Rational prescribing, dispensing and use of antimicrobials are important approaches in combating AMR



# Background Information

- In 2017, the Philippines participated in the Global PPS for the first time involving 16 private and public tertiary hospitals in Luzon and Visayas islands



# Objective

To determine the prevalence of antimicrobial use in hospitalized patients



# Methods

- One day cross sectional survey of inpatient wards
- Done between September – November 2017
- Used a standardized and validated forms developed by Global PPS
- Data collection was done by a team of doctors, infection control nurses and pharmacists in the participating hospitals



# Methods

- Data entry using paper forms
  - Ward form (denominator data)
  - Patient form (numerator data)
- Data were encoded onto the web-based Global PPS application and were subsequently validated and reported with the help of the Univ. of Antwerp, Belgium (Global PPS)



# Results

- There were 3692 patients on antimicrobials
- 2030 ( 54.9%) were males; 1662 ( 45%) were females

## 5,933 antimicrobial prescriptions

**5,355 (90.3%) antibacterials for systemic use (ATC J01)**

92 (1.6%) antimycotics for systemic use (ATC J02)

351 (5.9%) drugs to treat tuberculose (ATC J04)

102 (1.7%) nitroimidazole derivatives (ATC code P01AB)

28 (0.5%) intestinal anti-infectives (ATC code A07)

5 (0.1%) neuraminidase inhibitors (ATC code J05AH)

# Overall Antibiotic Use Prevalence Rate

- Adult Patients: **57.2%**
- Combined Children and Neonates: **53.3%**  
**(Children 61.2%; neonates 31.8%)**

**The Philippines has high overall antimicrobial prevalence rates in adults and children**





## Top 5 recorded diagnoses for which therapeutic antimicrobials (CAI and HAI) have been prescribed among adults

	(N) Prevalence rates (%)		
Diagnosis	CAI	HAI	Total
Pneumonia	(440) 60.7%	(220) 33.9%	(660)39.7%
SST	(117) 13.6%	(25) 6.8%	(202)12.1%
GI	(94) 7.2%	(14) 3.8%	(108) 6.5%
TB	(104) 8.0%	(1) 0.3%	(105) 6.3%
IA	(72) 5.5%	(17) 4.6%	(89) 5.3%



# Top antibiotics prescribed for treatment (CAI & HAI) of pneumonia among adults

	CAI (n=715 antibiotics)	HAI (n=300 antibiotics)	Total (n=1015 antibiotics)
Azithromycin	<b>26.6 %</b>	6.0%	<b>20.5%</b>
Piperacillin Tazobactam	<b>15.2%</b>	<b>26.7%</b>	<b>18.6%</b>
Ceftriaxone	<b>15.8%</b>	4.3%	<b>12.4 %</b>
Meropenem	5.3%	<b>19.7%</b>	9.6 %
Levofloxacin	5.0%	7.3%	5.7%
Ampicillin/enz.inh.	5.6%	0.7%	4.1%
Clindamycin	2.9%	5.0%	3.5%
Cefuroxime	4.2%	1.0%	3.3%
Cefixime	2.9%	2.0%	2.7%
Co-trimoxazole	2.7%	2.3%	2.6%
Cefepime	2.2%	3.0%	2.5%



# Top 5 recorded diagnoses for which therapeutic antimicrobials (CAI and HAI) have been prescribed among children

Diagnosis	(N)Prevalence rates (%)		
	CAI	HAI	Total
Pneumonia	(279) 51.9%	(41) 41.0%	(320) 50.2
Gastro-intestinal	(47) 8.7%	(1) 1.0%	(48) 7.5%
Skin Soft Tissue	(36) 6.7%	(6) 6.0%	(42) 6.6%
SEPSIS	(13) 2.4%	(27) 27.0%	(40) 6.3%
CNS	(27) 5.0%	(11) 11.0%	(38) 6.0%

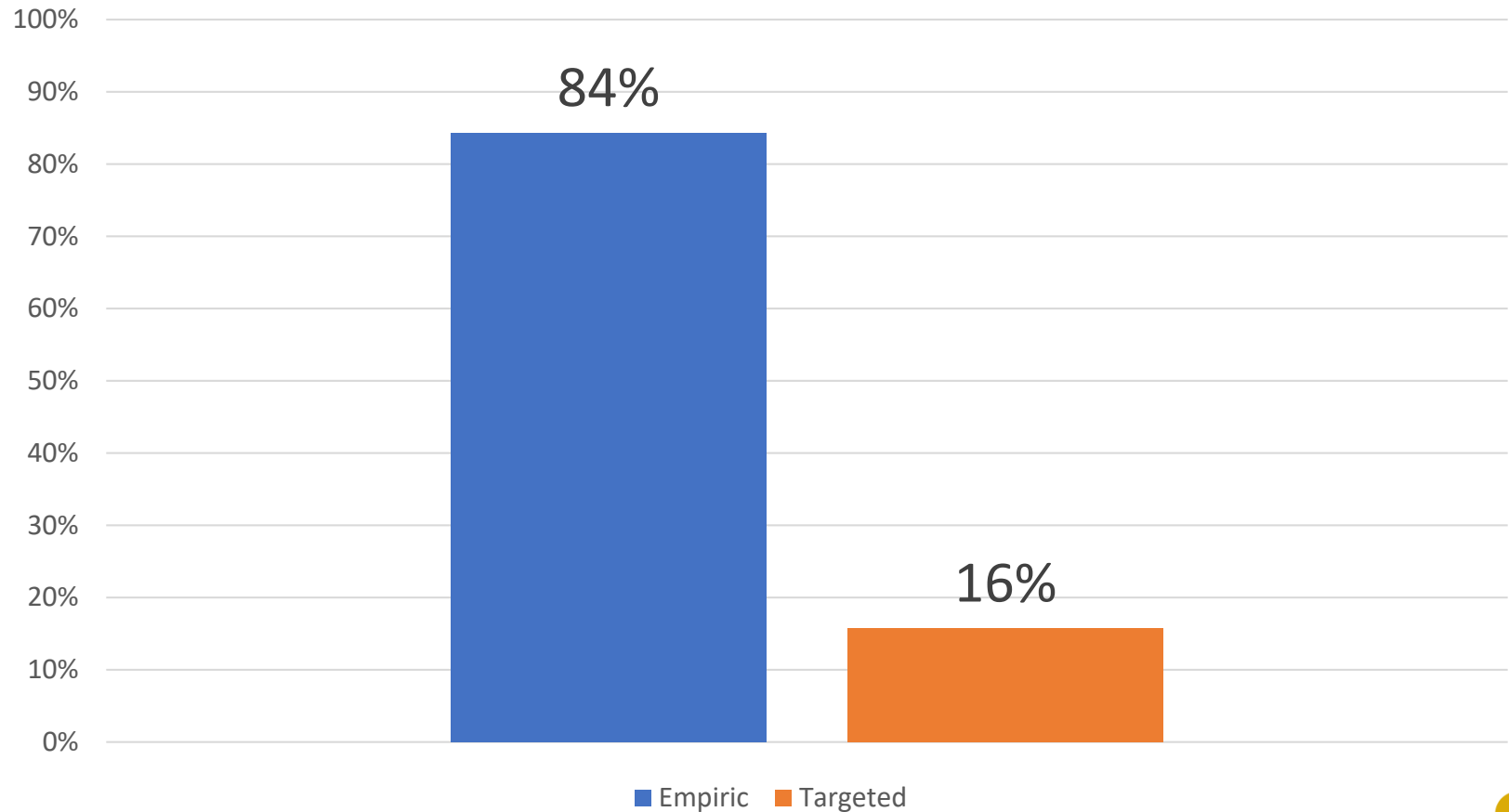


## Top antibiotic prescribed for treatment (CAI & HAI) of **pneumonia** among **children**

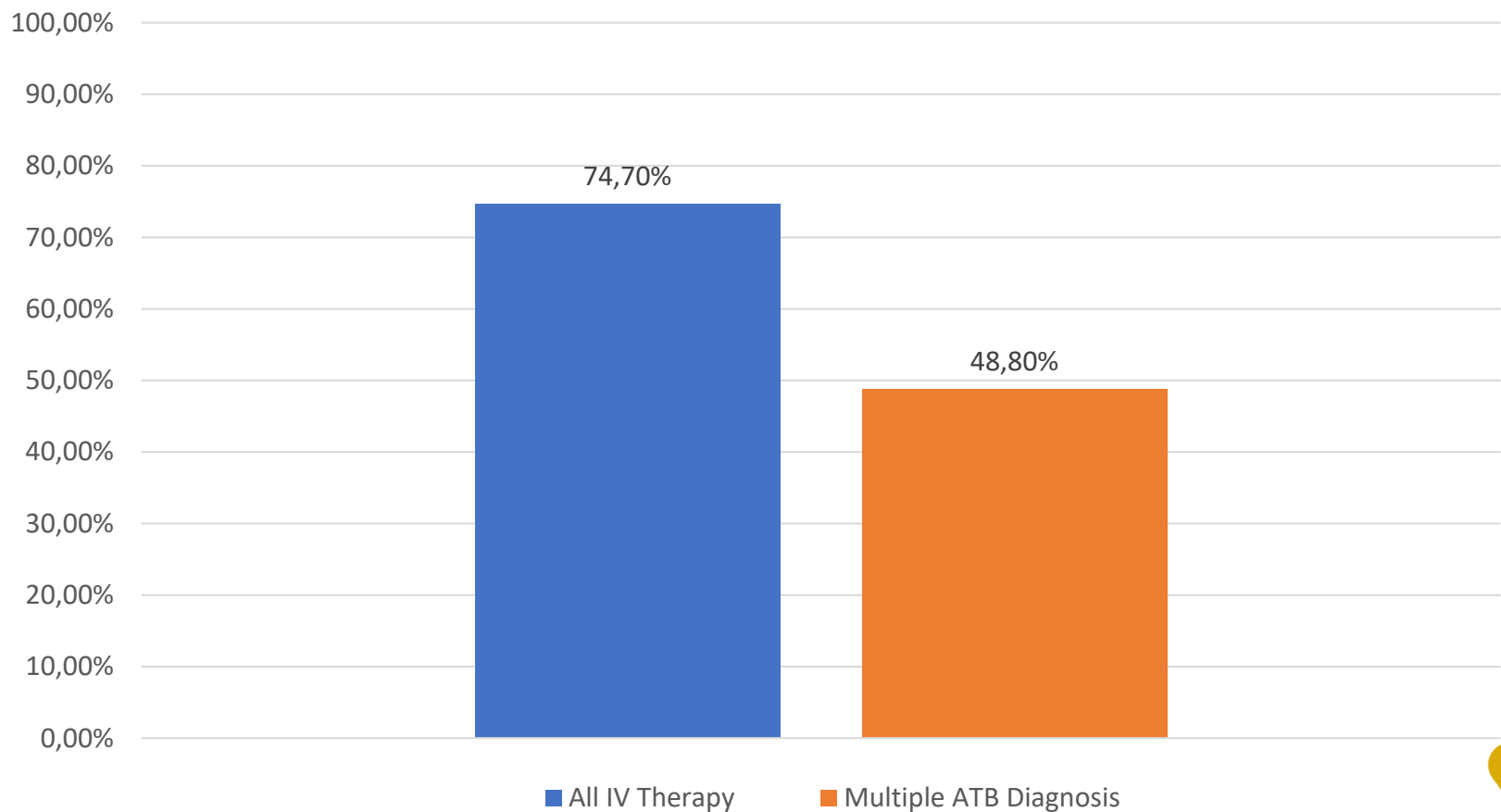
	CAI (n=416 antibiotics)	HAI (n=54 antibiotics)	Total (n=470 antibiotics)
Cefuroxime	<b>16.1</b>	5.6	<b>14.9</b>
Amikacin	<b>14.4</b>	<b>14.8</b>	<b>14.5</b>
Ampicillin	<b>13.9</b>	3.7	<b>12.8</b>
Ceftriaxone	12.7		11.3
Benzylopenicillin	10.6	1.9	9.6
Piperacillin tazobactam	5.0	9.3	5.5
Meropenem	2.4	<b>18.5</b>	4.3
Clarithromycin	3.8	5.6	4.0
Cefotaxime	3.1	3.7	3.2
Azithromycin	3.1		2.8
Ceftazidime	0.5	<b>16.7</b>	2.3
Cefepime	1.2	3.7	1.5
Ciprofloxacin	0.5	9.3	1.5



# Therapeutic Antimicrobial Use for Pneumonia by Type of Treatment



# Key Prescription Patterns for Pneumonia



# Conclusion

- PPS is a tool for antimicrobial stewardship
- Can be used as feedback for policy development, staff education and behavior change in hospitals
- AMS programs are now in place in hospitals in the Philippines.
- These data are important quality indicators of antimicrobial use
- To monitor the effectiveness of our stewardship program repeated PPS should be done.



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16 Participating Hospitals - Directors and AMS Teams

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- Bicol Regional Training and Teaching Hospital
- Chung Hua Hospital, Mandaue
- Corazon Locsin Montelibano Memorial Medical Center
- Iloilo Doctor's Hospital
- JB Lingad Medical Center
- Makati Medical Center
- Perpetual Help Delta Medical Center
- Philippine General Hospital
- Research Institute for Tropical Medicine
- Rizal Medical Center
- St Louis Hospital
- St Luke's Medical Center – Global City
- The Medical City
- Vicente Sotto Medical Center
- Western Visayas Medical Center





# TRAINING ON POINT PREVALENCE SURVEY OF ANTIMICROBIAL USE

JULY 17-18, 2017 | B HOTEL, MADRIGAL BUSINESS PARK,  
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Thank You Very Much!

Maraming Salamat Po!

