Dr. Ronald Irwanto Natadidjaja, SpPD, Subsp.PTI(K), FINASIM

Formal Education

- **Universitas Indonesia**, Subspesialis / Konsultan Penyakit Tropis & Infeksi, Lulus 2013
- **Universitas Indonesia**, Spesialis Penyakit Dalam (Internist), Lulus 2009
- **Universitas Trisakti**, Dokter Umum, Lulus 2002
- **SMP-SMA Kolese Kanisius**, Jakarta, Lulus 1994

Organization

- **Kepala Bagian Ilmu Penyakit Dalam**, Fakultas Kedokteran Universitas Trisakti, 2013-2020, 2025-sekarang
- **Pendiri** dan **Perintis** RASPRO Indonesia Study Group, **Yayasan Pelita RASPRO Indonesia** untuk studi resistensi antimikroba dan penggunaan antimikroba bijak di Indonesia
- **Ketua PPI** RSPI Bintaro Jaya
- **Internist-Konsultan**, RSPI Puri Indah, RSPI Bintaro Jaya, dan Tzu Chi Hospital – Pantai Indah Kapuk
- **Bendahara**, Perhimpunan Ilmu Kedokteran Tropis dan Penyakit Infeksi Indonesia (PETRI), Jakarta, 2016-2023
- **Sekretaris Jenderal (Sekjen)**, Pengurus Pusat Perhimpunan Pengendalian Infeksi Indonesia (PERDALIN), 2016-2022
- **Tim Ahli** Pokja Pencegahan dan Pengendalian Infeksi (PPI), Kemenkes RI, 2017-2024

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Membangun PPRA / PGA di Rumah Sakit

Dr. Ronald Irwanto Natadidjaja, SpPD, Subsp.PTI (K), FINASIM

RASPRO Indonesia Study Group and Education for Antimicrobial Stewardship & Resistance

Trisakti – RASPRO Indonesia Antimicrobial Stewardship (TRIASE) Learning Centre

Fakultas Kedokteran Universitas Trisakti

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Multidrug-resistant, extensively drug-resistant and pandrug-resistant bacteria: an international expert proposal for interim standard definitions for acquired resistance

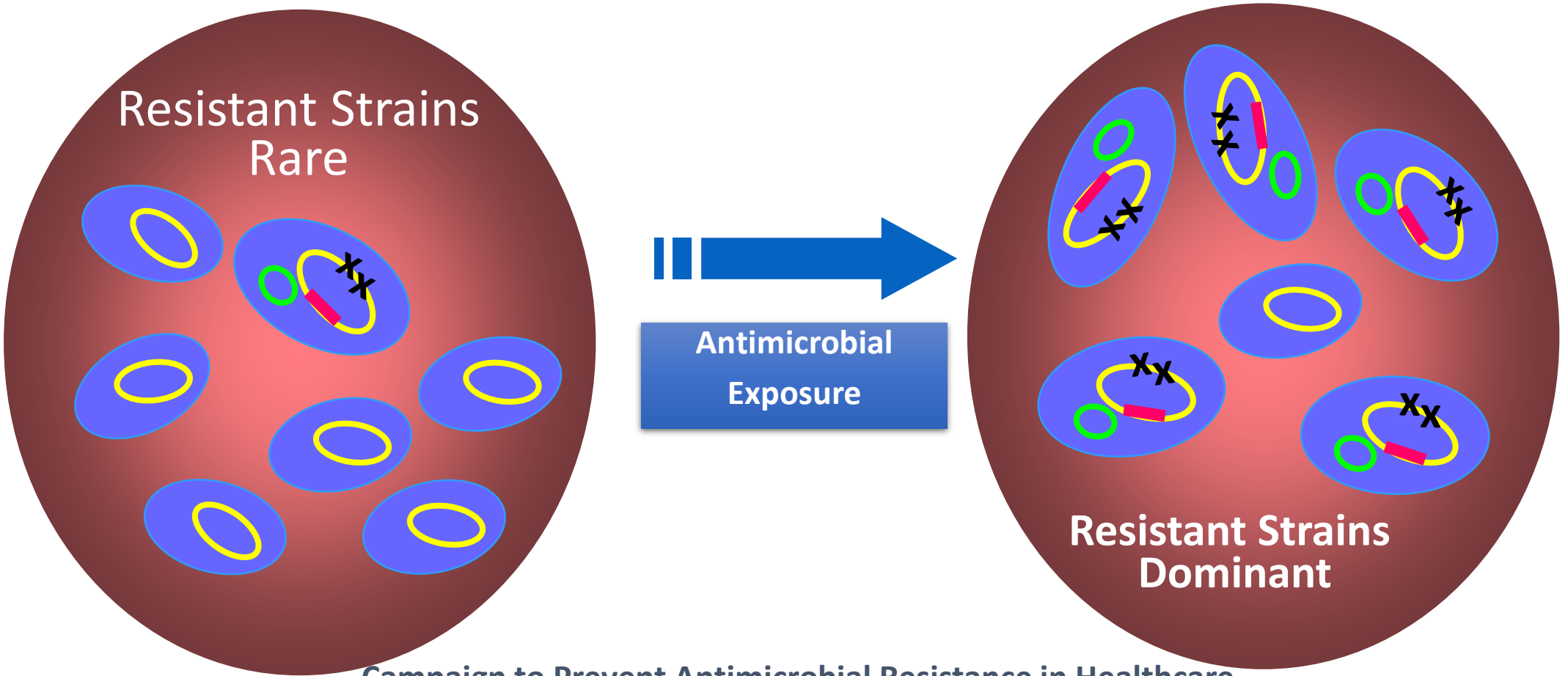
A.-P. Magiorakos[1], A. Srinivasan[2], R. B. Carey[2], Y. Carmeli[3], M. E. Falagas[4,5], C. G. Giske[6], S. Harbarth[7], J. F. Hindler[8], G. Kahlmeter[9], B. Olsson-Liljequist[10], D. L. Paterson[11], L. B. Rice[12], J. Stelling[13], M. J. Struelens[1], A. Vatopoulos[14], J. T. Weber[2] and D. L. Monnet[1]

1) *European Centre for Disease Prevention and Control, Stockholm, Sweden,* 2) *Office of Infectious Diseases, Department of Health and Human Services, Centers for Disease Control and Prevention, Atlanta, GA, USA,* 3) *Division of Epidemiology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel,* 4) *Alfa Institute of Biomedical Sciences (AIBS), Athens, Greece,* 5) *Department of Medicine, Tufts University School of Medicine, Boston, MA, USA,* 6) *Department of Clinical Microbiology, Karolinska University Hospital, Stockholm, Sweden,* 7) *Infection Control Programme, University of Geneva Hospitals, Geneva, Switzerland,* 8) *Department of Pathology and Laboratory Medicine, University of California Los Angeles Medical Center, Los Angeles, CA, USA,* 9) *Department of Clinical Microbiology, Central Hospital, Växjö,* 10) *Department of Bacteriology, Swedish Institute for Infectious Disease Control, Solna, Sweden,* 11) *The University of Queensland Centre for Clinical Research, Royal Brisbane and Women's Hospital, Brisbane, Qld, Australia,* 12) *Warren Alpert Medical School of Brown University, Providence, RI,* 13) *Department of Medicine, Brigham and Women's Hospital, Boston, MA, USA and* 14) *Department of Microbiology, National School of Public Health, Athens, Greece*

Abstract

Many different definitions for multidrug-resistant (MDR), extensively drug-resistant (XDR) and pandrug-resistant (PDR) bacteria are being used in the medical literature to characterize the different patterns of resistance found in healthcare-associated, antimicrobial-resistant bacteria. A group of international experts came together through a joint initiative by the European Centre for Disease Prevention and Control (ECDC) and the Centers for Disease Control and Prevention (CDC), to create a standardized international terminology with which to describe acquired resistance profiles in *Staphylococcus aureus*, *Enterococcus* spp., *Enterobacteriaceae* (other than *Salmonella* and *Shigella*), *Pseudomonas aeruginosa* and *Acinetobacter* spp., all bacteria often responsible for healthcare-associated infections and prone to multidrug resistance. Epidemiologically significant antimicrobial categories were constructed for each bacterium. Lists of antimicrobial categories proposed for antimicrobial susceptibility testing were created using documents and breakpoints from the Clinical Laboratory Standards Institute (CLSI), the European Committee on Antimicrobial Susceptibility Testing (EUCAST) and the United States Food and Drug Administration (FDA). MDR was defined as acquired non-susceptibility to at least one agent in three or more antimicrobial categories, XDR was defined as non-susceptibility to at least one agent in all but two or fewer antimicrobial categories (i.e. bacterial isolates remain susceptible to only one or two categories) and PDR was defined as non-susceptibility to all agents in all antimicrobial categories. To ensure correct application of these definitions, bacterial isolates should be tested against all or nearly all of the antimicrobial agents within the antimicrobial categories and selective reporting and suppression of results should be avoided.

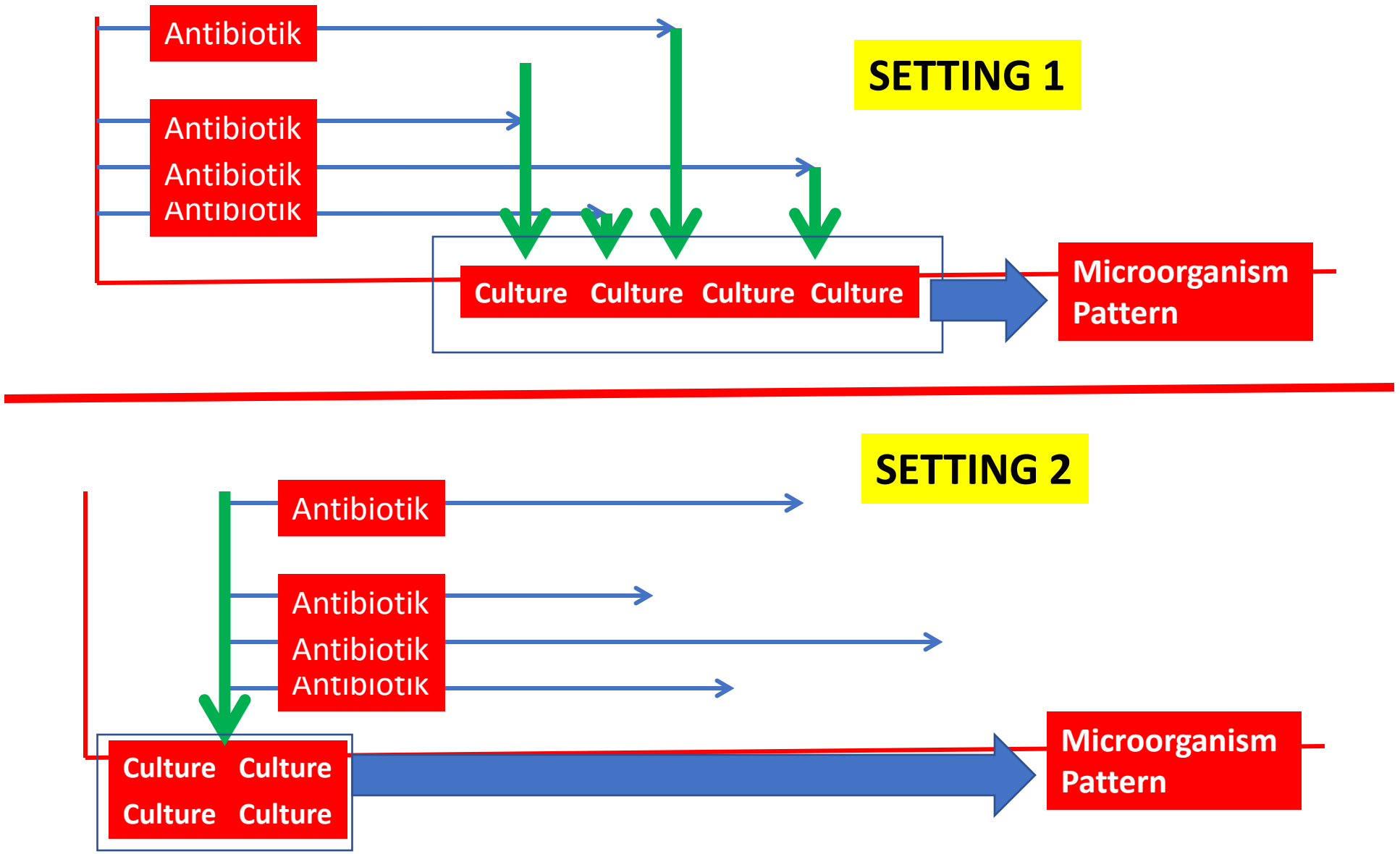
Mechanism of Antimicrobial Resistance:
"Selective Pressure" for Antimicrobial-Resistant Strains



Campaign to Prevent Antimicrobial Resistance in Healthcare Settings, CDC 2002

Fungsi Kultur

- **Diagnosis Infeksi Individu**
- **Diagnosis Komunitas :**
  - **Surveillance**
  - **Pertimbangan pembuatan panduan antimkroba empirik**


Antibiotik
Antibiotik
Antibiotik
Antibiotik
SETTING 1
Culture Culture Culture Culture
Microorganism Pattern
SETTING 2
Antibiotik
Antibiotik
Antibiotik
Antibiotik
Culture Culture
Culture Culture
Microorganism Pattern

Community

Pola Kepekaan dan Resistensi Mikroorganisme Aerob pada
Infeksi Jaringan Lunak Komplikata dengan Berbagai Manifestasi Klinisnya
di Tiga IGD Rumah Sakit di Jakarta

GRAM Positive

OXA Sensitive S. aureus : 95.5%

GRAM NEGATIVE

Pseudomonas sp Sensitive to

MEM : 92.3%
IMP : 92.3%
TZP : 92.3%
LVX : 69.2%
AMK : 84.6%

Ronald Irwanto ,Suhendro, Khie Chen, Yeva Rosana, 2009

Hospital

UNIVERSA MEDICINA
January-April, 2013 *Vol.32 - No.1*

Culture-and nonculture-based antibiotics for complicated soft tissue infections are comparable

Ronald Irwanto*,**, Suhendro**, Khie Chen**, and Murdani Abdullah***

GRAM Positive

OXA Sensitive S. aureus : 84.6 %

GRAM NEGATIVE

Pseudomonas sp Sensitive to

MEM : 68.2%
IMP : 78.7%
TZP : 50.0%
LVX : 54.5%
AMK : 68.2%

Ronald Irwanto ,Suhendro, Khie Chen, et al . Universa Medicina 2013

Komisi Akreditasi Rumah Sakit

Journal of Hospital Accreditation, 2021
Vol 03, Edisi 2, hal 114-118
Tanggal Publikasi, 25 Juli 2021

Laporan Peningkatan Mutu

PENINGKATAN MUTU PENGGUNAAN ANTIBIOTIK BIJAK MELALUI KESESUAIAN TEMUAN HASIL KULTUR DENGAN KAJIAN RISIKO PASIEN MENURUT MODEL REGULASI ANTIMIKROBA SISTEM PROSPEKTIF (RASPRO)

RONALD IRWANTO NATADIDJAJA[1,2], HADIANTI ADLANI[2], HADI SUMARSONO[2,3]

[1]Departemen Ilmu Penyakit Dalam FK TRISAKTI, Jakarta

[2]RASPRO Indonesia Study Group

[3]Ikatan Apoteker Indonesia

Tabel 3. Kesesuaian Temuan Hasil Kultur dengan Kajian Risiko Pasien Menurut Model RASPRO

	Multisensitif		MDR				Prediksi	
			ESBL		Non ESBL			
	n	%	n	%	n	%	Sesuai	Tidak Sesuai
Gram Negatif								
Acinetobacter sp.	0	0,00	0	0,00	4	10,00	4	0
Pseudomanas sp.	0	0,00	0	0,00	7	17,50	7	0
Klebsiela pneumonia	15	26,32	2	22,22	6	15,00	21	2
Escheceria coli	18	31,58	7	77,78	6	15,00	28	3
Citrobacter koseri	0	0,00	0	0,00	1	2,50	1	0
Enterobacter sp.	1	1,75	0	0,00	1	2,50	2	0
Proteus sp.	0	0,00	0	0,00	2	5,00	2	0
Providencia stuartii	0	0,00	0	0,00	1	2,50	1	0
Pantoea agglomerans	1	1,75	0	0,00	0	0,00	1	0
Raoultella ornithinolytica	0	0,00	0	0,00	1	2,50	1	0
Serratia fonticola	1	1,75	0	0,00	0	0,00	1	0
Total	**36**	**63,15**	**9**	**100,00**	**29**	72,50	**69**	**5**
Gram Positif								
Staphylococcus aureus	4	7,02	0	0,00	1 *	2,50	5	0
Staphylococcus epidermidis	1	1,75	0	0,00	2 **	5,00	3	0
Enterococcus faecalis	4	7,02	0	0,00	2	5,00	5	1
Enterococcus faecium	1	1,75	0	0,00	1	2,50	1	1
Streptococcus sp.	8	14,04	0	0,00	4	10,00	12	0
Staphylococcus sp.	3	5,26	0	0,00	1	2,50	3	1
Total	**21**	**36,84**	0	0,00	**11**	27,50	**29**	**3**
TOTAL	**57**	**100,00**	**9**	**100,00**	**40**	**100,00**	**98**	**8**

* MRSA ** MRSE

Tabel 4. Persentase Kesesuaian Hasil Kultur dengan Kajian Risiko Infeksi Multisensitif dan MDR Model RASPRO

	Sesuai		Tidak Sesuai		Total	
	n	%	n	%	n	%
Multisensitif	54	94,74	3	5,26	57	100,00
MDR	44	89,80	5	10,20	49	100,00

ORIGINAL ARTICLE

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P-ISSN.2089-1180, E-ISSN: 2302-2914

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Published by Bali Medical Journal

The Association between Medical History-based Risks and Sepsis Events in Immunocompromised Patients according to Type III Stratification of the Indonesian Regulation on the Prospective Antimicrobial System (*Regulasi Antimikroba Sistem Prospektif / RASPRO*)

Ronald Irwanto Natadidjaja[1*], Armi Setia Kusuma[2], Gede Bangun Sudradjad[3], Lies Nugrohowati[4]

[1]Department of Internal Medicine, Faculty of Medicine, Universitas Trisakti, Indonesia;
[2]Izza Cikampek Hospital, West Java, Indonesia;
[3]Nganjuk Local General Hospital, East Java, Indonesia;
[4]Hermina Hospital, Depok, West Java, Indonesia;

*Corresponding author:
Ronald Irwanto;
Department of Internal Medicine, Faculty of Medicine, Universitas Trisakti, Indonesia;
ronald.irwanto@yahoo.com

Received: 2021-07-09
Accepted: 2021-12-05
Published: 2021-12-30

ABSTRACT

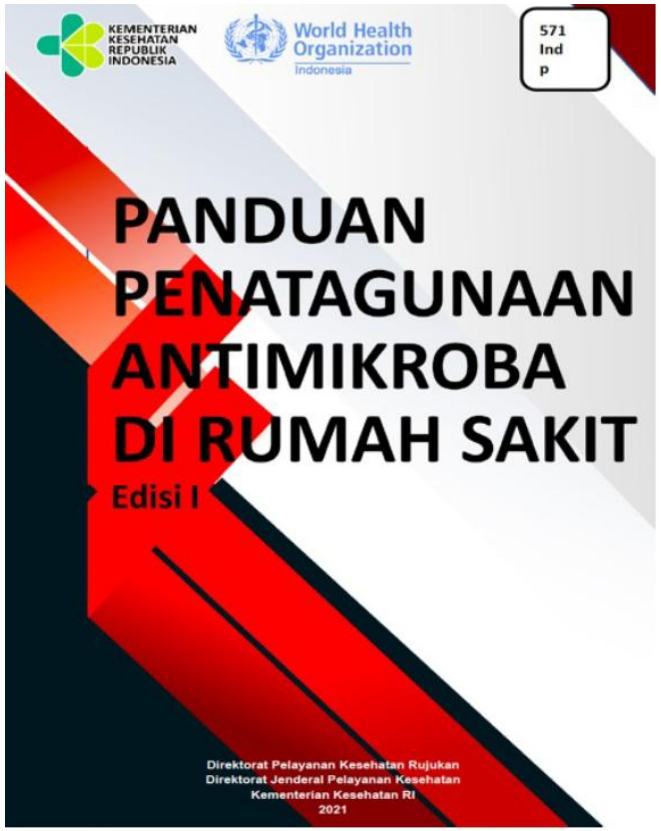
Background: The Indonesian Regulation on the Prospective Antimicrobial System (*Regulasi Antimikroba Sistem Prospektif/ RASPRO*) is a novel program. Its role has been reinforced by the Indonesian Ministry of Law and Human Rights Stipulation, which may predict the risk of sepsis events. Our study aimed to evaluate whether the risk factors listed in the *RASPRO* consensus have actual effects on sepsis events.

Method: The study was a retrospective cohort using secondary data with 98 subjects. The subjects were categorized into two groups, i.e., the *RASPRO* group with type III stratification (RASPRO Group) and Non-type III stratification *RASPRO* group (Non-RASPRO Group). Subjects with infection but with conditions other than the abovementioned criteria were categorized into the Non-RASPRO group.

Results: We found that among subjects in the RASPRO group, a history of antibiotic use over the past <30 days (OR 3.42; 95%CI 1.32–8.85; p=0.011) and a history of having procedure using medical instruments within the last <30 days (OR 2.62; 95%CI 1.06–6.45; p=0.037) seemed to be greatest risk factors for sepsis events.

Conclusion: The RASPRO group has a higher risk for sepsis events than the non-RASPRO with a history of antibiotic undergoing a procedure using a medical instrument within the last <30 days possessed the greatest risk factors for sepsis events.

Keywords: *RASPRO*, stratification, risks, sepsis.
Cite This Article: Natadidjaja, R.I., Kusuma, A.S., Sudradjad, G.B., Nugrohowati, L. 2021. The Association between Medical History-based Risks and Sepsis Events in Immunocompromised Patients according to Type III Stratification of the Indonesian Regulation on the Prospective Antimicrobial System (*Regulasi Antimikroba Sistem Prospektif / RASPRO*). *Bali Medical Journal* 10(3): 1031-1036. DOI: 10.15562/bmj.v10i3.2561


KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
World Health Organization
Indonesia
571
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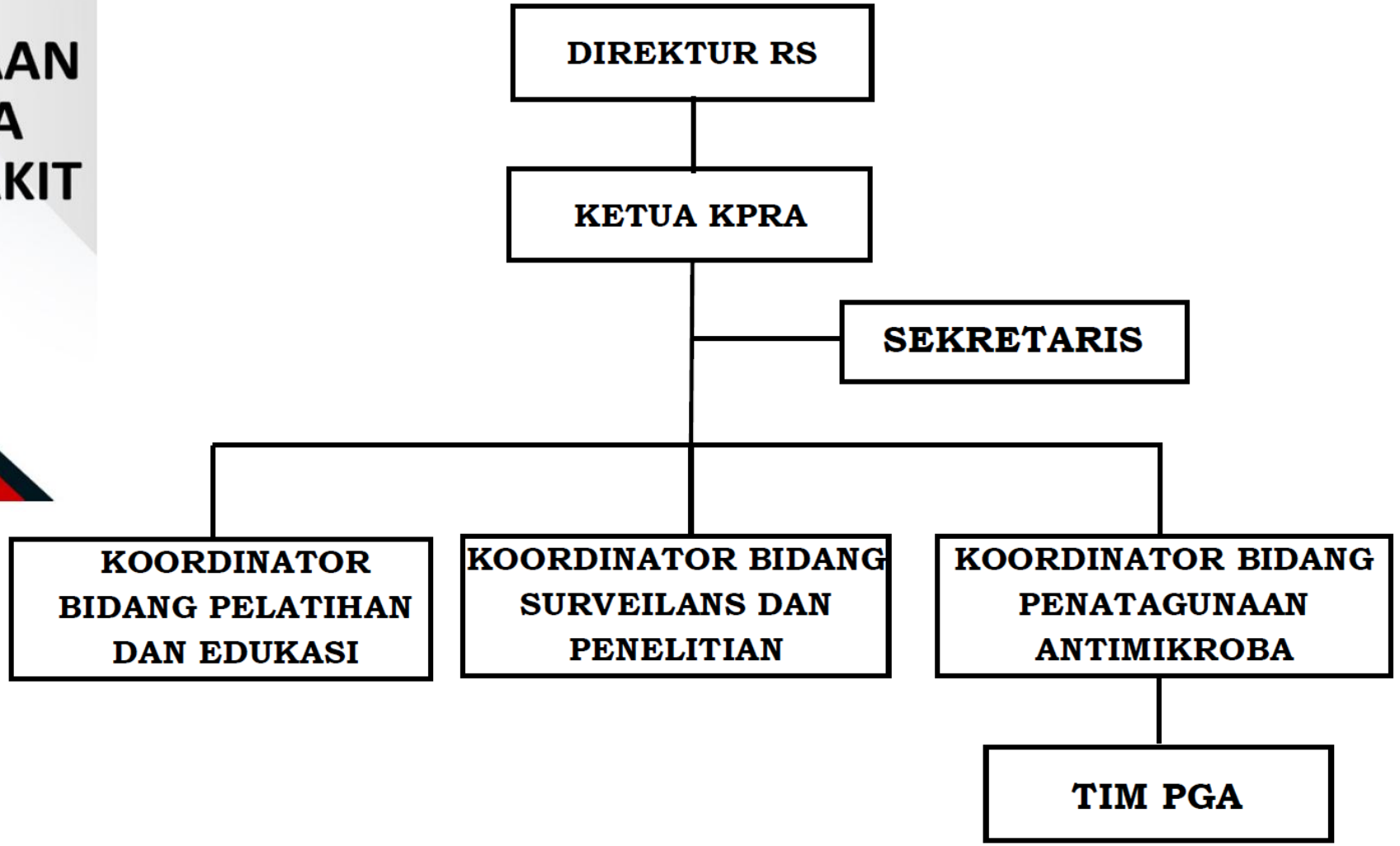
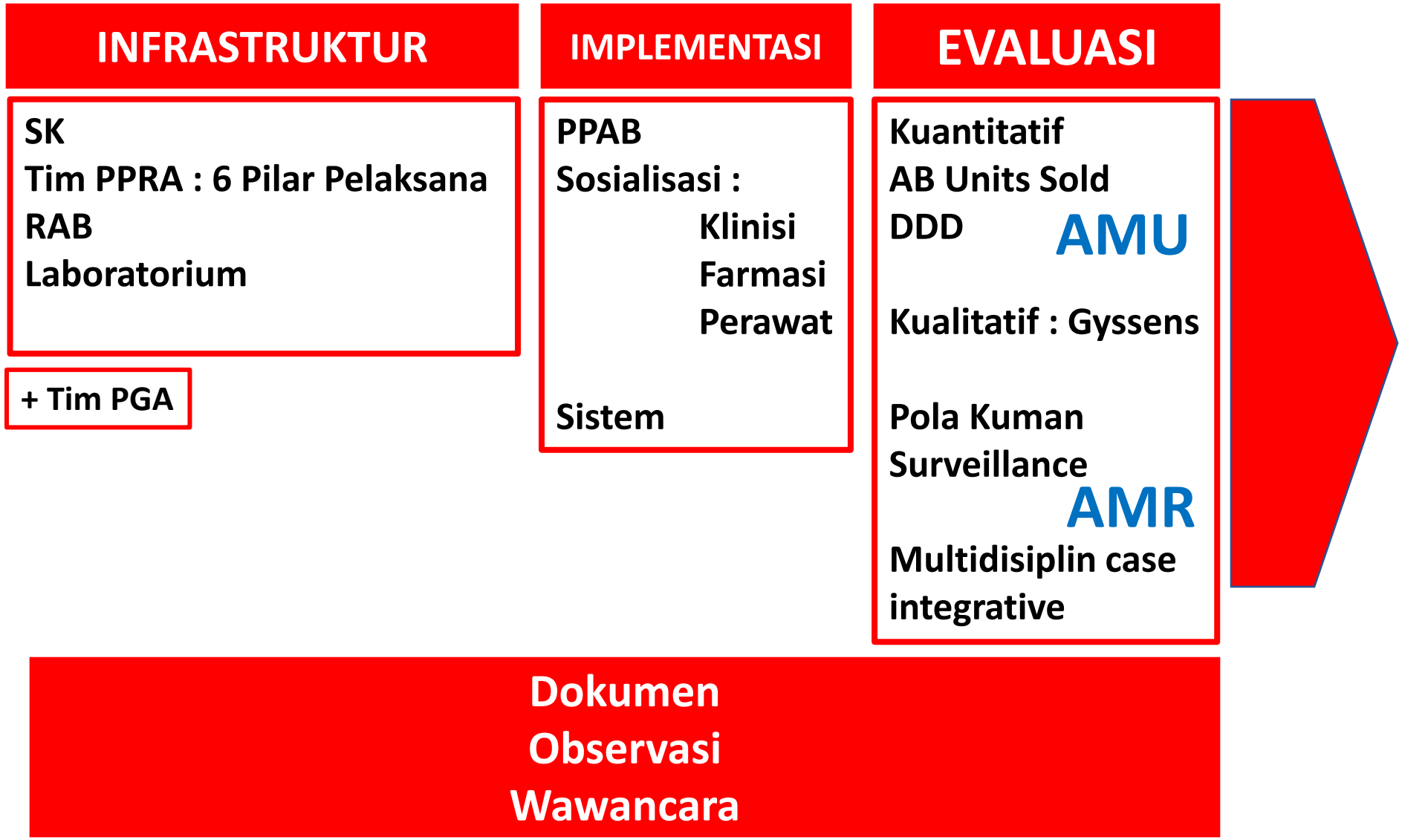
PANDUAN PENATAGUNAAN ANTIMIKROBA DI RUMAH SAKIT
Edisi I
Direktorat Pelayanan Kesehatan Rujukan
Direktorat Jenderal Pelayanan Kesehatan
Kementerian Kesehatan RI
2021


DIREKTUR RS
KETUA KPRA
SEKRETARIS
KOORDINATOR BIDANG PELATIHAN DAN EDUKASI
KOORDINATOR BIDANG SURVEILANS DAN PENELITIAN
KOORDINATOR BIDANG PENATAGUNAAN ANTIMIKROBA
TIM PGA

PPRA


INFRASTRUKTUR
SK
Tim PPRA : 6 Pilar Pelaksana
RAB
Laboratorium
+ Tim PGA
IMPLEMENTASI
PPAB
Sosialisasi :
Klinisi
Farmasi
Perawat
Sistem
EVALUASI
Kuantitatif
AB Units Sold
DDD
AMU
Kualitatif : Gyssens
Pola Kuman
Surveillance
AMR
Multidisiplin case
integrative
Dokumen
Observasi
Wawancara

It is sometimes difficult to draw a direct relationship between system interventions and their effects. In the hospital sector, many of the studies of the efficacy of AMS have reported on structural and process measures (such as the presence of guidelines and reduction in antimicrobial use)

McGowan JE. Antimicrobial stewardship: the state of the art in 2011 – focus on outcome and methods. Infect Control Hosp Epidemiol 2012;33(4):331–7. 7.
MacDougall C, Polk R. Antimicrobial stewardship programs in health care systems. Clin Microbiol Rev 2005;18(4):638–56.

Komisi Akreditasi Rumah Sakit

Journal of Hospital Accreditation, 2019
Vol 01, Edisi 2, hal 36-40
Tanggal Publikasi, 31 Juli 2019

Artikel Penelitian

Survei Persepsi Kebutuhan dan Hambatan Rumah Sakit dalam Menjalankan Fungsi Panitia Pengendalian Resistensi Antibiotik

RONALD IRWANTO[1,2], DJOKO WIDODO[2], AZIZA ARIYANI[3], HADIANTI ADLANI[2]

[1] Fakultas Kedokteran, Universitas Trisakti, Jakarta
[2] Perhimpunan Kedokteran Tropis dan Penyakit Infeksi Indonesia
[3] Pengurus Pusat Perkumpulan Pengendalian Infeksi Indonesia

Hasil: Pada survei ini diperoleh 26.92% dari 156 rumah sakit yang telah menjalankan program PPRA di rumah sakit. 65.38% menyatakan hanya sebagian dokter yang duduk sebagai anggota PPRA mampu melakukan tugasnya. 40.48% dari responden rumah sakit yang telah menjalankan program PPRA mengatakan bahwa tidak adanya sistem implementasi merupakan kesulitan utama dalam menjalankan program PPRA. Sementara 61.90% mengatakan anggota PPRA rumah sakitnya baru setengah mampu melakukan restriksi antibiotik. 93.86% dari 114 responden rumah sakit yang belum menjalankan program PPRA menyatakan saat ini yang paling dibutuhkan adalah konsep yang jelas untuk menjalankan program PPRA.

	Jumlah (n)	Persentase (%)
Persepsi Responden Terhadap Kemampuan Dokter sebagai Anggota PPRA di Rumah Sakit		
Mampu	36	23.0%
Sebagian Mampu	102	65.38%
Tidak Mampu	12	7.69%
Tidak Tahu	6	3.85%
TOTAL	**156**	**100.00%**
Persepsi Terhadap Hambatan dalam Pelaksanaan Program di RS yang Sudah Menjalankan PPRA		
Membuat PPAB	8	19.05%
Praktik Implementasi PPAB	17	40.48%
Restriksi Antibiotik	14	33.33%
Evaluasi Antibiotik	3	7.14%
TOTAL	**42**	**100.00%**
Persepsi Responden Terhadap Kemampuan Anggota PPRA dalam Melakukan Restriksi AB		
Sepenuhnya Mampu	6	14.29%
Belum Sepenuhnya Mampu	26	61.90%
Belum mampu	9	21.43%
Tidak tahu	1	2.38%
TOTAL	**42**	**100.00%**
Persepsi Kebutuhan dalam Pelaksanaan PPRA bagi Rumah Sakit yang Belum Menjalankan PPRA		
Konsep pelaksanaan program yang jelas	107	93.86%
Restriksi Antibiotik	1	0.88%
Evaluasi dan Pelaporan Penggunaan Antibiotik	1	0.88%
Pengambilalihan Tanggung Jawab Pemberian Semua Antibiotik oleh PPRA	5	4.39%
TOTAL	**114**	**100.00%**

Journal of Hospital Accreditation, 2019
Vol 01, Edisi 2, hal 36-40

Futuristic Fashion in Antimicrobial Used - The WHO "Kick of" in 2023

- **Shifting WATCH to ≥ 60% ACCESS**

RASPRO Indonesia

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RESERVED

Aztrenonam
Ceftazidime Avibactam
Ceftaroline Fosamil
Ceftolozane Tazobactam

Imipenem cilastatin-relebactam

Fosfomycin IV
Colistin
Polymixin B
Tygecycline

This group includes antibiotics and antibiotic classes that should be reserved for treatment of confirmed or suspected infections due to multi-drug-resistant organisms. Reserve group antibiotics should be treated as "last resort" options.

WATCH

Quinolones
Azithromycin

2nd , 3rd& 4th Generation of Cephalosporin

Piperacillin Tazobactam
Carbapenems

This group includes antibiotic classes that have higher resistance potential and includes most of the highest priority agents among the Critically Important Antimicrobials for Human Medicine and/or antibiotics that are at relatively high risk of selection of bacterial resistance. These medicines should be prioritized as key targets of stewardship programs and monitoring. Selected Watch group antibiotics are recommended as essential first or second choice empiric treatment options for a limited number of specific infectious syndromes and are listed as individual medicines on the WHO Model Lists of Essential Medicines.

ACCESS

Ampicillin Sulbactam
Ampicillin
Amoxicillin Clavulanate
Amoxicillin

1st Generation of Cephalosporin

Amikacin
Gentamycin

This group includes antibiotics that have activity against a wide range of commonly encountered susceptible pathogens while also showing lower resistance potential than antibiotics in the other groups. Selected Access group antibiotics are recommended as essential first or second choice empiric treatment options for infectious syndromes reviewed by the EML Expert Committee and are listed as individual medicines on the Model Lists of Essential Medicines to improve access and promote appropriate use.

AWARE 2021

World Health Organization

UNIVERSITAS TRISAKTI

RASPRO Indonesia

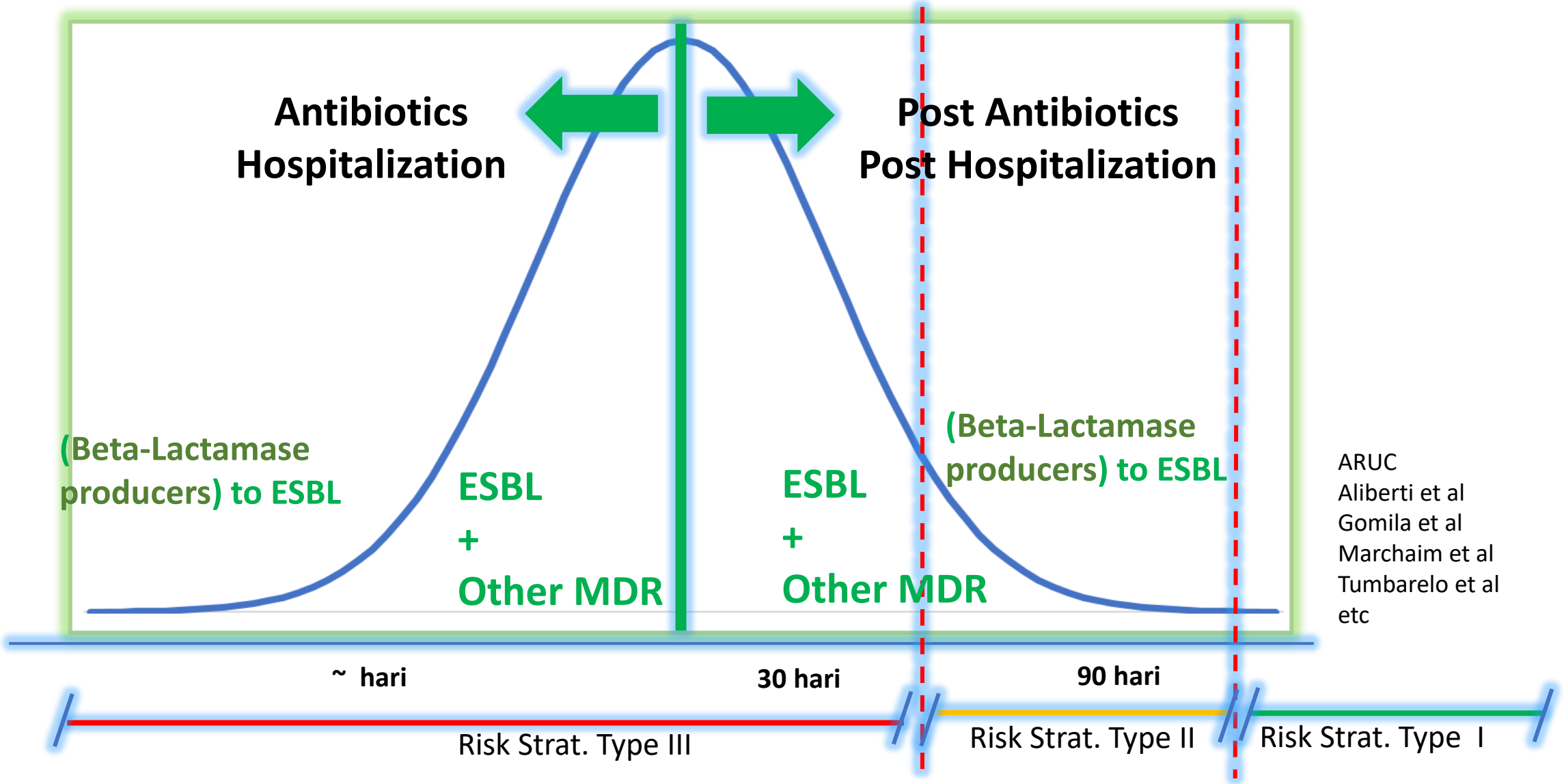
www.new.rasproindonesia.com

USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

Improved Access. Improved Services. Better Health Outcomes.

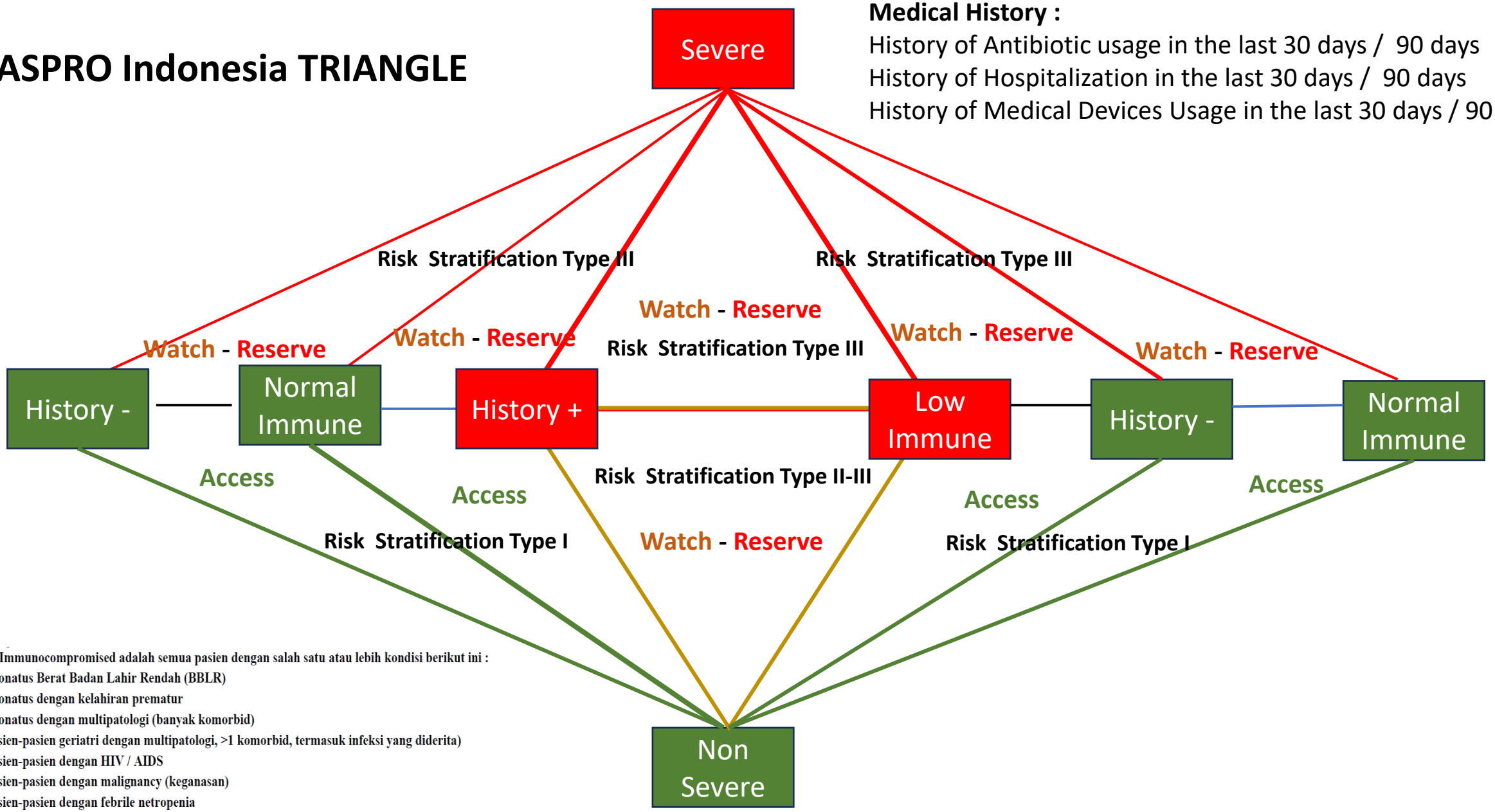
A Technical Guide to Implementing the World Health Organization's AWaRe Antibiotic Classification in MTaPS Program Countries

Goals of AWaRe Categorization: The overall goal is to reduce the use of antibiotics in the Watch and Reserve groups (the antibiotics most crucial for human medicine and at higher risk of resistance) and to increase the use of Access antibiotics where availability is low. The first goal of AWaRe is to have all countries report antibiotic use, through the Antimicrobial Resistance Surveillance System (GLASS), by 2023, and the second is for 60% of global antibiotic consumption to come from medicines in the Access category.[7] Currently, 65 countries track antibiotic use but only 29 meet the 60% Access national consumption goal.[8] Evidence shows that meeting the 60% goal will result in not only better use of antibiotics but also reduced costs and increased access. Reaching this threshold by 2023 will contribute to countries' achievement of the health-related Sustainable Development Goals.


Antibiotics
Hospitalization
Post Antibiotics
Post Hospitalization
(Beta-Lactamase
producers) to ESBL
ESBL
+
Other MDR
ESBL
+
Other MDR
(Beta-Lactamase
producers) to ESBL
ARUC
Aliberti et al
Gomila et al
Marchaim et al
Tumbarelo et al
etc
~ hari
30 hari
90 hari
Risk Strat. Type III
Risk Strat. Type II
Risk Strat. Type I

Risk Stratification Type 3	Risk Stratification Type 2	Risk Stratification Type 1
Severe /HAIs / Febrile Neutropenia / Threatening Organ Perforation AND / OR Immunocompromized AND / OR Uncontrolled DM : + History of antibiotic use in the last 30 days AND / OR History of ≥ 48 hours hospitalization in the last 30 days AND / OR History medical devices use in the last 30 days	Non Severe / Non Life Threatening – Non HAIs Immunocompromized AND / OR Uncontrolled DM : History of antibiotic use in the last 90 days AND / OR History of ≥ 48 hours hospitalization in the last 90 days AND / OR History medical devices use in the last 90 days	Non Risk Stratification Type 3 and / or 2  
Empiric Antibiotic for Severe Case or Suspected ESBLs or Other MDRO	Empiric Antibiotic for Suspected (Beta Lactamase Producers) to ESBLs	Empiric Antibiotic for Multi-Sensitive Organism
RESERVE RESERVE WATCH WATCH	WATCH WATCH WATCH ACCESS	ACCESS ACCESS ACCESS ACCESS

RASPRO Indonesia TRIANGLE



Medical History :

History of Antibiotic usage in the last 30 days / 90 days
History of Hospitalization in the last 30 days / 90 days
History of Medical Devices Usage in the last 30 days / 90 days

Pasien Immunocompromised adalah semua pasien dengan salah satu atau lebih kondisi berikut ini :

1. Neonatus Berat Badan Lahir Rendah (BBLR)
2. Neonatus dengan kelahiran prematur
3. Neonatus dengan multipatologi (banyak komorbid)
4. Pasien-pasien geriatri dengan multipatologi, >1 komorbid, termasuk infeksi yang diderita)
5. Pasien-pasien dengan HIV / AIDS
6. Pasien-pasien dengan malignancy (keganasan)
7. Pasien-pasien dengan febrile netropenia
8. Pasien-pasien dengan penyakit kronis / infeksi kronis / infeksi berulang, sirosis hati dan gagal ginjal kronik
9. Pasien-pasien dengan autoimmune dan/atau penggunaan immunosupresan lama

JURNAL BIOMEDIKA DAN KESEHATAN
(JOURNAL OF BIOMEDIKA AND HEALTH)

Vol. 8 No. 2 (2025) pp. 127-141 e-ISSN: 2621-5470

ORIGINAL ARTICLE

A Quantitative Survey on Antibiotic Prescribing Pattern in Three Indonesian Hospitals Using Digital Antimicrobial Stewardship

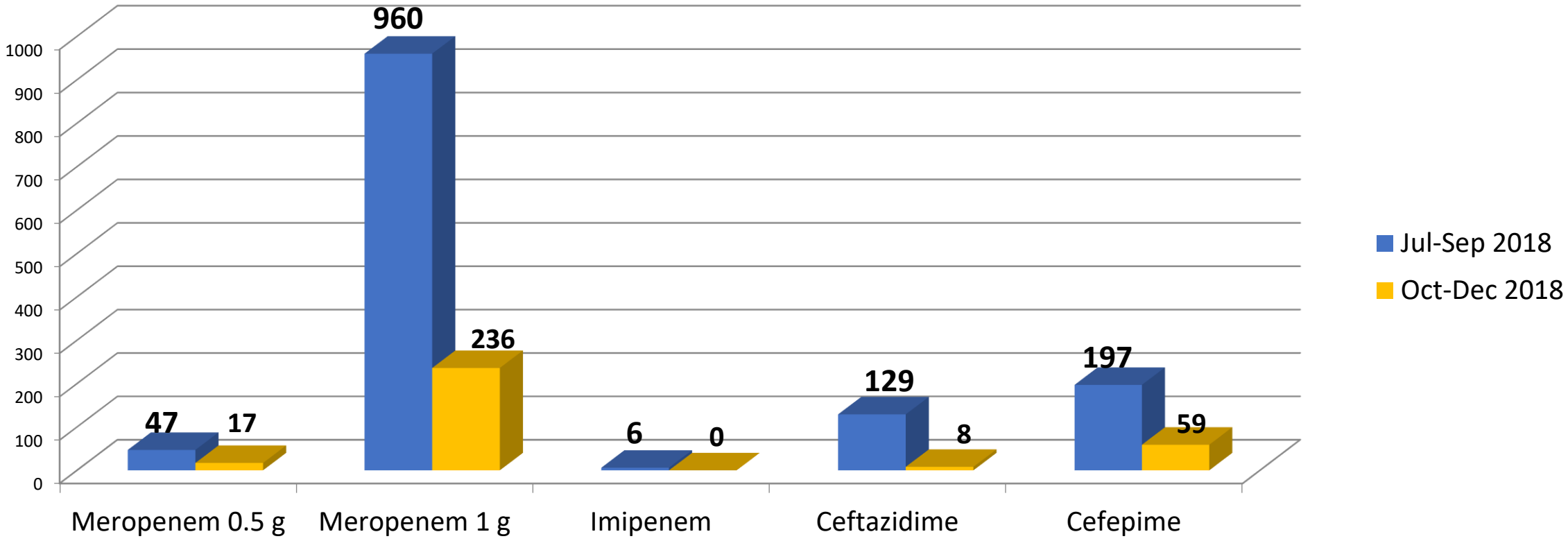
Survei Pola Kuantitas Peresepan Antibiotik di Tiga Rumah Sakit di Indonesia dengan Penatagunaan Antimikroba Digital

Ronald Irwanto Natadidjaja[1,2,3], Widyawati Lekok[2,8], Aziza Ariyani[1], Hadianti Adlani[1,4,5], Raymond Adianto[1], Ronaningtyas Maharani[1], Hadi Sumarsono[1], Yenny Yenny[2,3], Jihan Samira[2,3], Nany Hairunisa[2,3], Husnun Amalia[2,3], Meutia Atika Faradilla[2,3], Tubagus Ferdi Fadilah[2,3], Joice Viladelvia Kalumpiu[2,3], Yuliana Yuliana[2], Sri Mulyani[5], Desi Anggiat[5], Triyoko Septio Marja[5], Iin Indra Pertiwi[6], Dianawati Dianawati[6], Grace Nerry Legoh[7], Alvin Lekonardo Rantung[7]

Table 2. Initial Risk Stratification of Patients Receiving Antibiotics that Had Been Filled Out in the Digital Forms within 3 Months Following the Implementation of e-RASPRO in Three Hospitals

Risk Stratification	Hospital A 3 Months Oct – Dec 2021		Hospital B 3 Months Dec 2021 – Feb 2022		Hospital C 3 Months Nov 2022 – Jan 2023	
	Number	%	Number	%	Number	%
Type 1	284	90.16%	692	83.98%	1,472	81.15%
Type 2	31	9.84%	15	1.82%	84	4.63%
Type 3	-	0.00%	117	14.20%	258	14.22%
Total	315	100.00%	824	100.00%	1,814	100.00%

Three Months Comparison of Broad Antibiotics Unit Sold: Before and After RASPRO-RASAL Criteria Implemented



Ronald Irwanto Natadidjaja*#, Yuhana Fitra, Yudianto Budi Saroyo**, Augustine Matatula**, Rinna Wamila Sundariningrum**

(MANUAL Model)

J Antimicrobiol Resist & Inf Control. 2019. 8(suppl 1): P357

International Journal of INFECTION CONTROL

ORIGINAL ARTICLE

Antibiotic usage at a private hospital in Central Java: results of implementing the Indonesian Regulation on the Prospective Antimicrobial System (Regulasi Antimikroba Sistem Prospektif Indonesia [RASPRO])

Ronald Irwanto Natadidjaja[1,2]*, Tarcisius Henry[1], Hadianti Adlani[1], Aziza Ariyani[1] and Rika Bur[1]

[1]RASPRO Indonesia Study Group, Jakarta, Indonesia; [2]Infectious Disease Division, Trisakti School of Medicine, Trisakti University, Jakarta, Indonesia

Abstract

Methods: A pre–post-descriptive study was conducted in 2019 for 3 months at a private hospital in Central Java, Indonesia, to evaluate the implementation of the Regulation on Indonesian Antimicrobial Stewardship Program (ASP), namely, the Prospective Antimicrobial System/Regulasi Antimikroba Sistem Prospektif Indonesia (RASPRO). Outcomes were measured before and after the implementation of the RASPRO in the ward including: 1) intravenous antibiotic defined daily dose (DDD) per 100 patient-days, 2) antibiotic expenditure, and 3) antibiotic expenditure per inpatient.

Result: The total antibiotic consumption was expressed in DDD/100 patient-days. For the levofloxacin category, the number increased intensely from 2.38 to 15.29; carbapenem escalated from 0.51 to 2.31, ceftriaxone from 32.10 to 38.03, and ampicillin sulbactam from 1.14 to 1.18. In contrast, cefuroxime significantly reduced from 17.25 to 1.38, cefotaxime decreased from 10.33 to 6.83, gentamicin decreased from 3.18 to 1.91, and amikacin decreased from 2.27 to 2.13. The overall cephalosporin usage decreased from 19.89 to 15.41. The total antibiotic expenditure had a decline of 20.28%, followed by 14.44% reduction on the percentage of antibiotic expenditure per inpatient.

Conclusion: Our study describes the 3-month analysis of antimicrobial usage before and after the implementation of the RASPRO by evaluating several parameters. The antibiotic consumption expressed in DDD/100 patient-days for each antibiotic category has demonstrated that there are different impacts that may be debatable and calls for further evaluation. A decrease in the total antibiotic expenditure has also been reported. However, since our study is a preliminary study, it should be continued by further studies that involve longer study duration to observe further impacts of the program.

(MANUAL Model)

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Antimicrobial Resistance and Infection Control

MEETING ABSTRACTS Open Access

International Conference on Prevention and Infection Control 2023

A quantitative survey of antibiotic use at a hospital in Jambi Province Indonesia in three-month before and after implementation of antimicrobial resistance control program by Raspro concept

R. I. Natadidjaja[1,2,*], R. Asmajaya[2], H. Basrie[2], H. Sumarsono[2]
[1]Internal Medicine, Faculty of Medicine, Universitas Trisakti, [2]Pelita RASPRO Indonesia Foundation, Jakarta Barat, Indonesia
Correspondence: R. I. Natadidjaja
Antimicrobial Resistance & Infection Control 2023, **12(Suppl 1):**P309

Introduction: Based on Decree of Minister of Health Number 8/2015 in article 11 concerning quality indicators of Antimicrobial Resistance Control Program (ARCP)/*Program Pengendalian Resistensi Antimikroba (PPRA)* implementation in hospitals, it has been known that reduced quantity of antimicrobial use has become one of those indicators.
Objectives: This survey is a descriptive study using secondary data retrieved between July and September 2019 (3 months before implementation of *RASPRO* concept) as well as between October and December 2019 (3 months after the implementation), which was aimed to evaluate impacts on implementing *Regulasi Antimikroba Sistem Prospektif (RASPRO)* concept at a hospital in Jambi province, Indonesia.
Methods: The survey was carried out by calculating the expenditure of 3 antibiotic classes, which were the most commonly used and usually given by injection in hospitals and Intensive Care Units (ICU)s, i.e. the beta-lactam, quinolones and carbapenem.
Results: We found reduced use of Ceftriaxone as many as 890 ampules (37.11%), for Cefotaxime the reduction was 580 ampules (67.13%); while the use of Cefoperazone reduced as many as 76 ampules (47.50%) and Ceftazidime reduced as many as 10 ampules (7.14%). The use of Ciprofloxacin reduced as many as 327 ampules (71.40%), but there was a drastic increase in the use of Levofloxacin as many as 59 ampules (>100%). The use of Carbapenems increased, which included 79 ampules (34.20%) for Meropenem; while the use of Imipenem increased as many as 9 ampules (100%). In three months after the implementation of *RASPRO* concept, 92.5% prophylaxis antibiotic had been given for appropriate indication and the antibiotic use of Cefazolin 71.3%. Within three months before and after the implementation of *RASPRO* concept, there was a total reduction of antibiotic use, which reached 1736 ampules (40.57%).
Conclusion: In conclusion, the implementation of *RASPRO* concept can be executed as an effort to reduce the quantity of antimicrobial use in hospitals. However, larger studies and longer monitoring are required in order to identify the impact of implementation of *RASPRO* concepts at a hospital.

Disclosure of Interest
None declared.

(MANUAL Model)

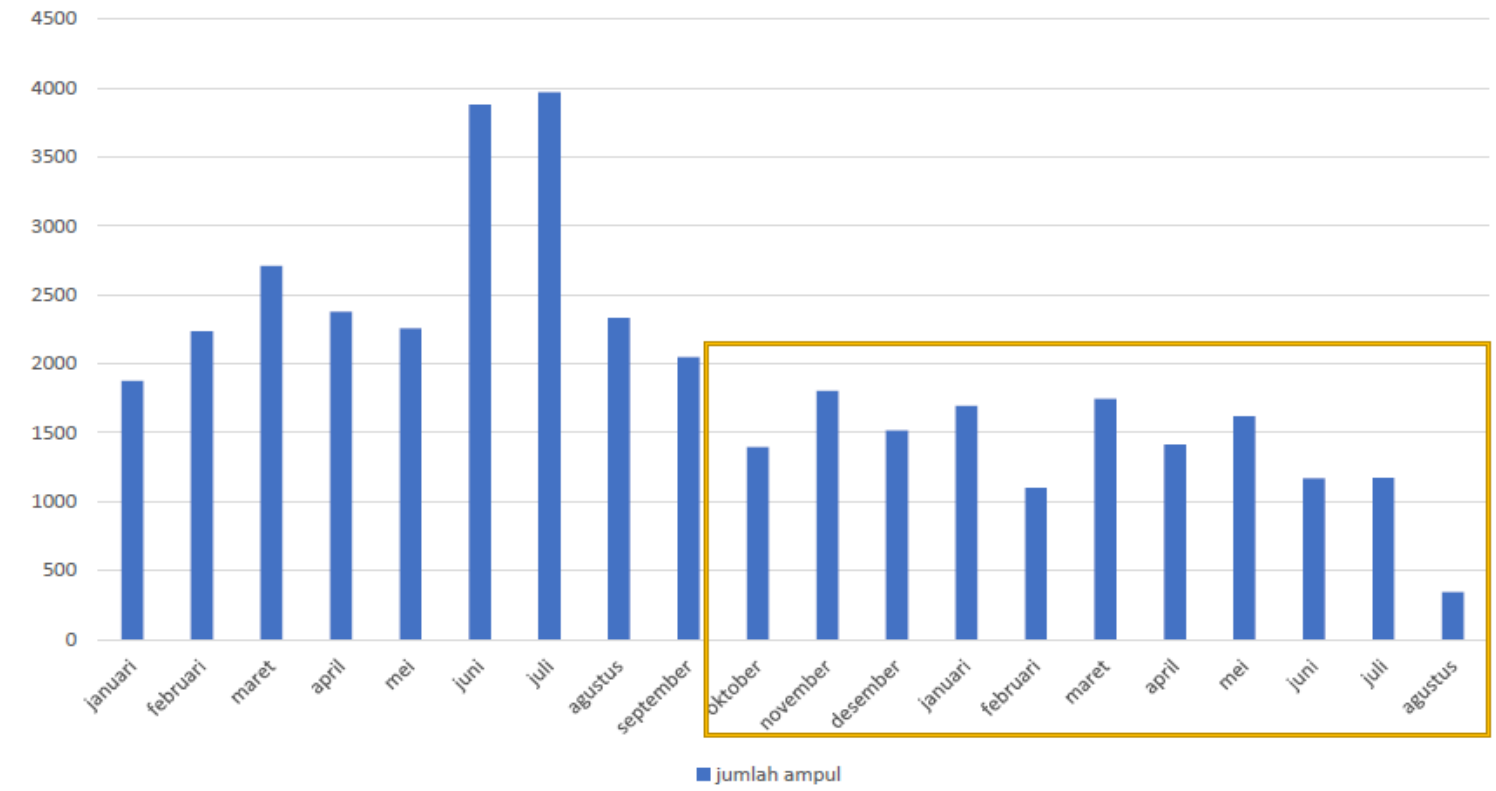
Qualitative Evaluation of Antibiotic with Gyssens Method by RASPRO Concept for Pneumonia at Pediatric Intensive Care Unit

Rinna W. Sundariningrum,[1] Darmawan Budi Setyanto,[2] Ronald Irwanto Natadidjaja[3]

Background. Pneumonia remains the commonest infective reason for admission to intensive care as well as being the most common secondary infection acquired whilst in the pediatric intensive care unit. Inappropriate use of antibiotics can increase morbidity, mortality, patient cost, and antibiotic resistance.
Objective. To qualitatively evaluate antibiotic use in pneumonia with The Gyssens method by RASPRO concept.
Methods. We performed a descriptive, retrospective study data based on medical records of patients with pneumonia who admitted to the pediatric intensive care unit in Hermina Bekasi Hospital from May to October 2019. Records were evaluation its qualitative antibiotic using the Gyssens method by RASPRO concept.
Result. This study discovered 51 cases (14,46%) of severe pneumonia. We found 119 antibiotics uses including 90 (75,63%) empirical therapies and 29 (24,37%) devinitive therapies. Ampicilin sulbactam was the most common antibiotic used (15,98%), followed by cefotaxime (15,12%), meropenem (13,44%), azithromycin (11,78%) and ceftriaxone (10,92%). Based on Gyssens method by RASPRO concept, appropriate antibiotic use (category 0) accounted for 63,02%, while inappropriated use accounted for 1,68% category IVa (improper; other antibiotics were more effective), 22,69% category IIIa (improper; duration too long), 9,24% category IIIb (improper; duration too short) and 3,36% category IIa (improper; incorrect dose).
Conclusion. Appropriate use of antibiotics showed quite good results, namely 63,03%. The RASPRO concept can be used to reduce subjectivity bias in qualitative antibiotic assessments by the Gyssens method for pneumonia treated in the pediatric intensive care unit. **Sari Pediatri** 2020;22(2):109-14

(MANUAL Model)

9 months before & after using digital ASP model



43% decline of Inpatient Antibiotic Usage

Dr. Iin Indra Pertiwi SpPD

RASPRO Indonesia - Indonesian Grass Root Meeting on Antimicrobial Stewardship (INDOGRAM)
World Antimicrobial Awareness Week, November 2022

To do further research in 3 hospitals , In progress publication

(Digital Model)

Trend Changing to the ACCESS Category Antibiotic Usage after Digital Antimicrobial Stewardship Tool e-RASPRO 9 Months Implementation in an Indonesian Hospital

Hadianti Adlani[1,2], Aziza Ariyani[2], Ronald Irwanto Natadidjaja[1,2,3], Anti Dharmayanti[1,2]

[1] Indonesian Society of Infection Control (INASIC) Branch Banten
[2] RASPRO Indonesia *Study Group*
[3] Faculty of Medicine Universitas Trisakti

Background: Antimicrobial Stewardship Program (ASP) is a global issue. World Health Organization (WHO) stated, there are 3 categories of antimicrobial: ACCESS, WATCH, and RESERVE. e-RASPRO as a digital ASP may alter antibiotic prescribing pattern by prioritizing ACCESS category as suggested by WHO.
Methods: This manuscript was a ward retrospective survey data of 9 months Define Daily Dose (DDD) average before-after implementing the electronic-RASPRO (e-RASPRO) on ACCESS & WATCH antibiotic.
Results: Number of inpatients 9 months before-after e-RASPRO implementation were 7,754 and 6,794. Within 9 months after implementing e-RASPRO there was a trend of antibiotic prescription shifting from WATCH category antibiotic to ACCESS category antibiotic. There was a trend of reduced Define Daily Dose (DDD) average of WATCH category antibiotic. 24.82% of 3rd generation Cephalosporin, 33.20% of Quinolones, 14.76% of Carbapenems and 100% of Piperacillin Tazobactam DDD average were reduced. While, in ACCESS Category Antibiotic, there were an elevation of Penicillin and Aminoglycosides DDD average up to 528.66% and 137.66%.
Conclusion: There are trend changing of DDD average from WATCH to ACCESS category antibiotic following the 9 months implementation of e-RASPRO. We need further study to judge the effectiveness of e-RASPRO as a digital ASP tools.

Keywords: digital antimicrobial stewardship, Define Daily Dose, ACCESS, WATCH

Dr. Hadianti Adlani, SpPD, Subsp.PTI(K)
APSIC Congress 2024

(Digital Model)

Clinical eHealth 7 (2024) 176–189

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Clinical eHealth

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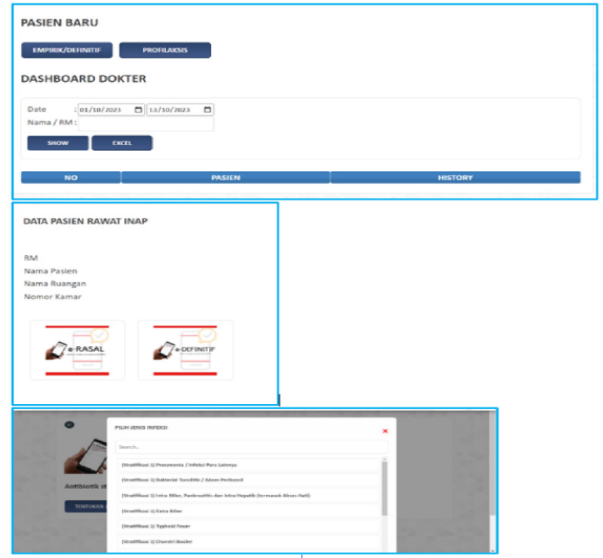
A survey on define daily dose of watch- and access-category antibiotics in two Indonesian hospitals following the implementation of digital antimicrobial stewardship tool

Ronald Irwanto Natadidjaja [a,b,*], Aziza Ariyani [a], Hadianti Adlani [a,c], Raymond Adianto [a], Iin Indah Pertiwi [a], Grace Nerry Legoh [a], Alvin Lekonardo Rantung [a], Hadi Sumarsono [a]

[a] RASPRO Indonesia Study Group, Indonesia
[b] Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
[c] Faculty of Medicine, Syarif Hidayatullah State Islamic University, Banten, Indonesia



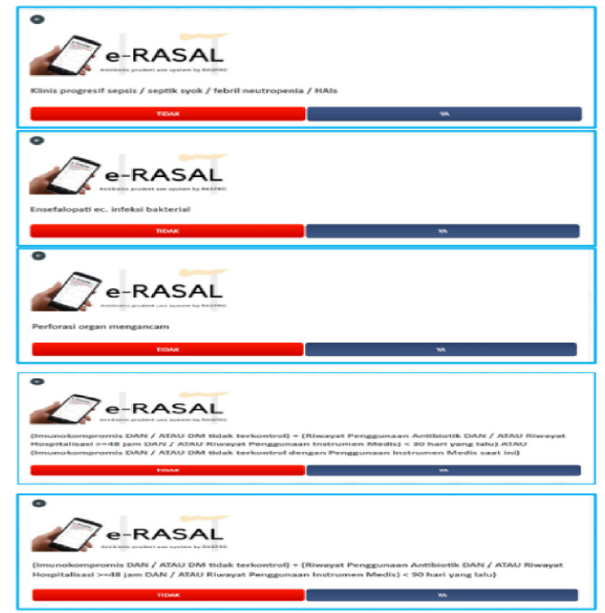


Table 1
DDD of Prophylactic Antibiotics in Hospital 1 and Hospital 2 at 3 Months Following the Implementation of e-RASPRO Tool.

	Hospital 1			Hospital 2		
	3 Months			3 Months		
	Before Implementing e-RASPRO	After Implementing e-RASPRO	Increase / Decrease	Before Implementing e-RASPRO	After Implementing e-RASPRO	Increase / Decrease
Cefazolin	7.16	19.13	167.18 %	2.84	2.31	−18.66 %
Ceftriaxone	4.21	4.63	9.98 %	–	–	–
Cefotaxime	2.04	2.20	7.84 %	–	–	–

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Youtube: **RASPRO Medik & Antibiotik**

THANK YOU!