Türkiye için Antimikrobiyal Yönetim Kılavuzu

BAŞKENT ÜNİVERSİTESİ 1993 25. Yıl

Dr. Özlem Kurt Azap

Başkent Üniversitesi Tıp Fakültesi

Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji AD

Türkiye için Antimikrobiyal Yönetim Kılavuzu

Türkiye için
Antimikrobiyal Yönetim Kılavuzu

Yola çıkarken…

Antimikrobiyal Yönetim

"Stewardship" **vs** "Management"

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY APRIL 2012, VOL. 33, NO. 4

SHEA/IDSA/PIDS POLICY STATEMENT

Policy Statement on Antimicrobial Stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious

- Uygun endikasyon
- Uygun ilac

Antimikrobiyal yönetim;
antimikrobiyal tedavi ile enfeksiyon kontrol önlemlerinin **evliliğidir**

and measure the appropriate use of antimicrobial agents by promoting the selection of the optimal antimicrobial drug regimen including dosing, duration of therapy, and route of administration." [2] Given new regulatory requirements and political sup-

- Uygun yol
- Uygun süre

Yıl: 1997

Society for Healthcare Epidemiology of America and Infectious Diseases Society of America Joint Committee on the Prevention of Antimicrobial Resistance: Guidelines for the Prevention of Antimicrobial Resistance in Hospitals

David M. Shlaes, Dale N. Gerding, Joseph F. John, Jr., William A. Craig, Donald L. Bornstein, Robert A. Duncan, Mark R. Eckman, William E. Farrer, William H. Greene, Victor Lorian, Stuart Levy, John E. McGowan, Jr., Sindy M. Paul, Joel Ruskin, Fred C. Tenover, and Chatrchai Watanakunakorn

From Wyeth-Ayerst Research (Dr. Shlaes), Pearl River, New York; Veterans' Affairs Lakeside Medical Center (Dr. Gerding), Chicago, Illinois; UMDNJ-Robert Wood Johnson Medical School (Dr. John), New Brunswick, New Jersey; William S. Middleton Memorial Veterans' Hospital (Dr. Craig), Madison, Wisconsin; SUNY Health Science Center (Dr. Bornstein), Syracuse, New York; Lahey Clinic (Dr. Duncan), Burlington, Massachusetts; Duluth Clinic Limited (Dr. Eckman), Duluth, Minnesota; St. Elizabeth Hospital (Dr. Farrer), Elizabeth, New Jersey;

➢Antimikrobiyallerin uygun kullanılması, direncin gelişmesini engelleyebilecek; en azından yavaşlatabilecektir

California, Centers for Disease Control and Prevention (Dr. Tenover), Atlanta, Georgia; and St. Elizabeth Hospital Medical Center (Dr. Watanakunakorn), Youngstown, Ohio

Antimicrobial resistance results in increased morbidity, mortality, and costs of health care. Prevention of the emergence of resistance and the dissemination of resistant microorganisms will reduce these adverse effects and their attendant costs. Appropriate antimicrobial stewardship that includes optimal selection, dose, and duration of treatment, as well as control of antibiotic use, will prevent or slow the emergence of resistance among microorganisms. A comprehensively applied infection control program will interdict the dissemination of resistant strains.

Clinical Infectious Diseases 1997; 25:584–99

Yıl: 2007

GUIDELINES

Infectious Diseases Society of America and the
Society for Healthcare
Guidelines for Develo
to Enhance Antimicrobial Stewardship

Timothy H. Dellit,[1] Robert C. Owens,[2] John E. McGowan, Jr.,[3] Dale N. Gerding,[4] Robert A. Weinstein,[5] John P. Burke,[6] W. Charles Huskins,[7] David L. Paterson,[8] Neil O. Fishman,[9] Christopher F. Carpenter,[10] P. J. Brennan,[9] Marianne Billeter,[11] and Thomas M. Hooton[12]

This document presents guidelines for developing in
ship, an activity that includes appropriate selection,

These guidelines focus on the development of effec-

very few data regarding effective interventions, and it is unclear which interventions are most responsible for improvement in these settings.

➢AMY programının oluşturulması için öneriler

➢Sadece YATAN hastalar için

➢Ayaktan hastalar veya bakımevindeki hastalar için DEĞİL!

Table 2. Causal associations between antimicrobial use and the emergence of antimicrobial resistance.

Changes in antimicrobial use are paralleled by changes in the

➢ Direnç; antimikrobiyal kullanımı ile ilişkili olarak daha çok antibiyotik kullanan yatan hastalarda görülür

ceived prior antimicrobials.

Areas within hospitals that have the highest rates of antimicrobial resistance also have the highest rates of antimicrobial use.

Increasing duration of patient exposure to antimicrobials increases the likelihood of colonization with resistant organisms.

Clinical Infectious Diseases 2007; 44:159–77

Yıl: 2012
Antimikrobiyal Yönetim- Amaç

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY APRIL 2012, VOL. 33, NO. 4

SHEA/IDSA/PIDS POLICY STATEMENT

Policy Statement on Antimicrobial Stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS)

therapy, and route of administration. The major objectives of antimicrobial stewardship are to achieve best clinical outcomes related to antimicrobial use while minimizing toxicity and other adverse events, thereby limiting the selective pressure on bacterial populations that drives the emergence of antimicrobial-resistant strains. Antimicrobial stewardship may also reduce excessive costs attributable to suboptimal antimicrobial use.

- **"En iyi klinik sonuç"**
- Tanı yöntemlerinin uygun kullanılması
- Kesin tanıya ulaşma sıklığının artması
- İlaç kullanımının azalmasına bağlı yan etkilerin azalması
- Tedavi modifikasyonu ile yatış süresinde kısalma
- Direncin azalması
- Maliyette azalma

Antimikrobiyal Yönetim Rehberi Yayımlayan Ülkeler

- ABD
- Almanya
- Hollanda
- Fransa
- İrlanda
- İngiltere
- İspanya
- ...

➢ **Antimikrobiyal** yönetim programı genellikle **antibakteriyel** yönetim programını ifade ediyor

➢ Antifungal Yönetim Programı:

Uygulayan yerler var ve etkili

➢ Antiviral Yönetim Programı ?

➢ Antiparaziter Yönetim Programı ??

Yıl: 2016

Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America

Tamar F. Barlam,[1,a] Sara E. Cosgrove,[2,a] Lilian M. Abbo,[3] Conan MacDougall,[4] Audrey N. Schuetz,[5] Edward J. Septimus,[6] Arjun Srinivasan,[7] Timothy H. Dellit,[8] Yngve T. Falck-Ytter,[9] Neil O. Fishman,[10] Cindy W. Hamilton,[11] Timothy C. Jenkins,[12] Pamela A. Lipsett,[13] Preeti N. Malani,[14] Larissa S. May,[15] Gregory J. Moran,[16] Melinda M. Neuhauser,[17] Jason G. Newland,[18] Christopher A. Ohl,[19] Matthew H. Samore,[20] Susan K. Seo,[21] and Kavita K. Trivedi[22]

Clinical Infectious Diseases™ 2016;62(10):e51–e77

Infection (2016) 44:395–439
DOI 10.1007/s15010-016-0885-z

dgi DEUTSCHE GESELLSCHAFT FÜR INFEKTIOLOGIE e.V.

CrossMark

GUIDELINE

Strategies to enhance rational use of antibiotics in hospital: a guideline by the German Society for Infectious Diseases

K. de With[1] · F. Allerberger[2] · S. Amann[3] · P. Apfalter[4] · H.-R. Brodt[5] · T. Eckmanns[6] · M. Fellhauer[7] · H. K. Geiss[8] · O. Janata[9] · R. Krause[10] · S. Lemmen[11] · E. Meyer[12] · H. Mittermayer[4] · U. Porsche[13] · E. Presterl[14] · S. Reuter[15] · B. Sinha[16] · R. Strauß[17] · A. Wechsler-Fördös[18] · C. Wenisch[19] · W. V. Kern[20]

Infection (2016) 44:395–439

Yıl: 2017

Developments in Emerging and Existing Infectious Diseases
Series Editors: Önder Ergönül and Füsun Can 2

ANTIMICROBIAL STEWARDSHIP

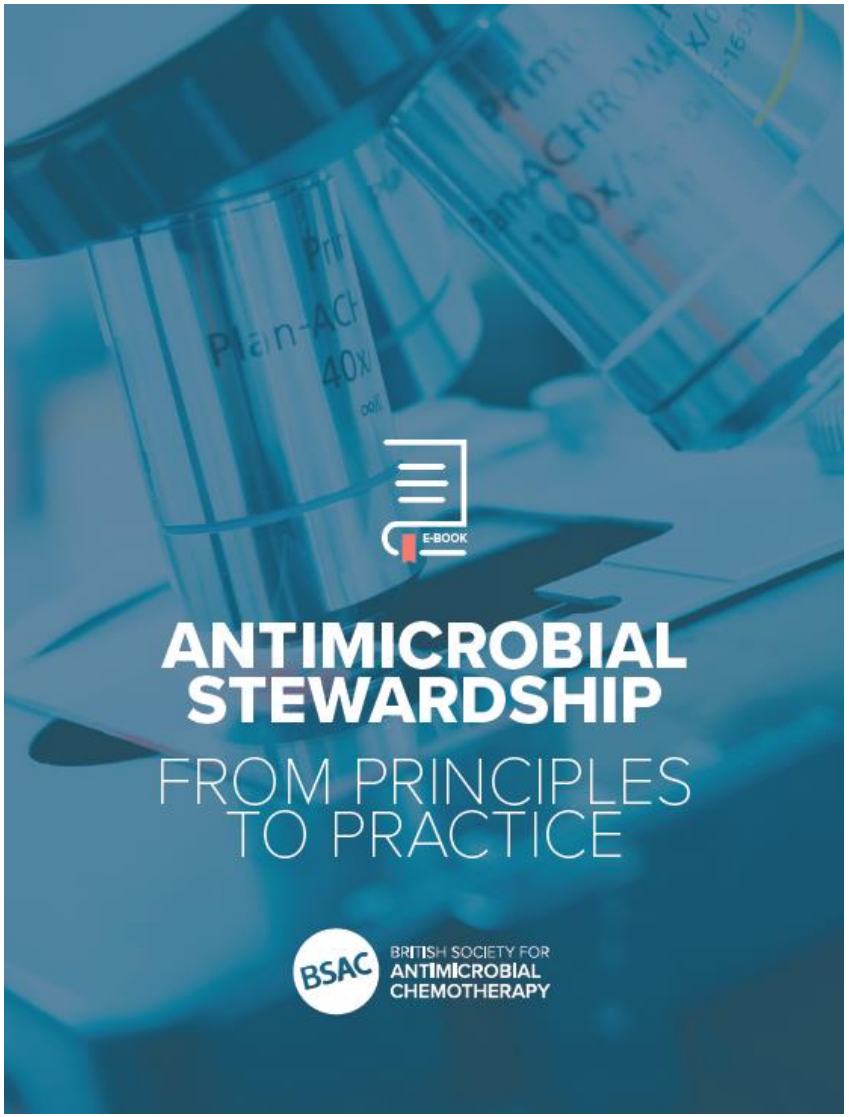
Edited by

Céline Pulcini, Önder Ergönül, Füsun Can, Bojana Beović

ESCMID MANAGING INFECTIONS PROMOTING SCIENCE

ESGAP ESCMID STUDY GROUP FOR ANTIBIOTIC POLICIES

Yıl: 2018



THIS E-BOOK HAS BEEN DEVELOPED BY BSAC

BSAC BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY

IN COLLABORATION WITH ESGAP/ESCMID

ESGAP ESCMID STUDY GROUP FOR ANTIMICROBIAL STEWARDSHIP
European Society of Clinical Microbiology and Infectious Diseases

ESCMID MANAGING INFECTIONS PROMOTING SCIENCE

PLEASE NOTE THAT THE AUTHORS' CHAPTERS DO NOT REFLECT THE OPINION OF ANY ORGANISATIONS THEY MAY BE ALIGNED WITH

GLOSSARY OF TERMS

ACKNOWLEDGEMENT

No venture into creating such an ambitious project can be done without support of a good team. It has been said "a team is not a group of people who work together but rather a group of people who trust each other ".
Our team epitomises this. With that in mind on behalf of all the editors and the contributors I would like to acknowledge the diligent, persistent and patient support of BSAC colleagues – Tracey Guise, CEO; Sally Bradley, eLearning manager and Neil Watson without whom the transformation of the written word into a visually engaging eBook could not have been accomplished. **Thank you all.**

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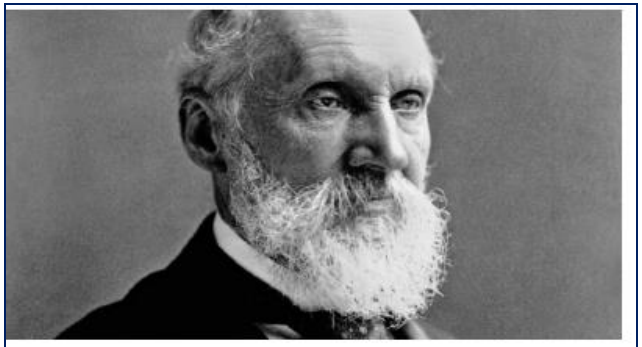


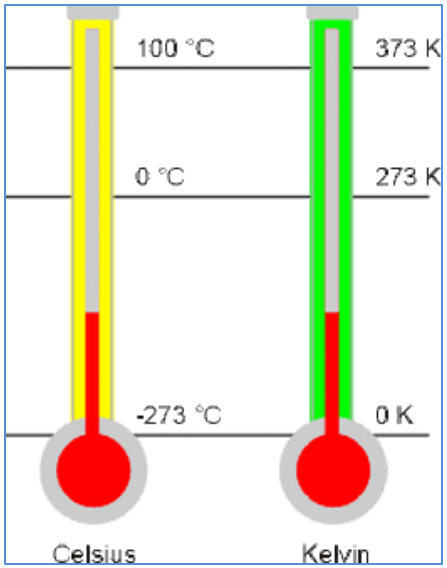
> *To measure is to know*

What Kelvin meant is how can we possibly know something, unless we measure it? In terms of antibiotic use: How can we possibly know about antibiotic prescribing unless we measure it?

On the importance of measurement Kelvin went further when he said:

> *When you can measure something and express it in numbers, you kno something about it. But when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind*

- Lord Kelvin (William Thomson) (1824-1907)
- "Mutlak sıfır"



Ölçmek bilmektir!

Ölçemezseniz geliştiremezsiniz!

> *If you cannot measure it, you cannot improve it*

Clinical Infectious Diseases

VIEWPOINTS

Combating Global Antibiotic Resistance: Emerging One Health Concerns in Lower- and Middle-Income Countries

Maya Nadimpalli,[1] Elisabeth Delarocque-Astagneau,[1] David C. Love,[2] Lance B. Price,[3] Bich-Tram Huynh,[1] Jean-Marc Collard,[4] Kruy Sun Lay,[5] Laurence Borand,[6] Awa Ndir,[7] Timothy R. Walsh,[8] and Didier Guillemot[1]; for the Bacterial Infections and antibiotic-Resistant Diseases among Young children in low-income countries (BIRDY) Study Group[a]

[1]Biostatistics, Biomathematics, Pharmacoepidemiology and Infectious Diseases Unit (B2PHI), Inserm, Université de Versailles Saint-Quentin-en-Yvelines (UVSQ), Institut Pasteur, Université Paris-Saclay, France; [2]Center for a Livable Future, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; [3]Milken Institute School of Public Health, George Washington University, Washington, District of Columbia; [4]Experimental Bacteriology Unit, Institut Pasteur of Madagascar, Antananarivo; [5]Food Microbiology and Water Analysis Laboratory and [6]Epidemiology and Public Health Unit, Institut Pasteur of Cambodia, Phnom Penh; [7]Institut Pasteur of Senegal, Dakar; and [8]Department of Medical Microbiology and Infectious Disease, Institute of Infection and Immunity, Heath Park Hospital, Cardiff, United Kingdom

Clinical Infectious Diseases® 2018;66(6):963–9

Clinical Infectious Diseases

IDSA FEATURES

Infectious Diseases Physicians: Leading the Way in Antimicrobial Stewardship

Belinda Ostrowsky,[1] Ritu Banerjee,[2] Robert A. Bonomo,[3,4,5] Sara E. Cosgrove,[6] Lisa Davidson,[7] Shira Doron,[8] David N. Gilbert,[9,10] Amanda Jezek,[11] John B. Lynch III,[12] Edward J. Septimus,[13,14] Javeed Siddiqui,[15] and Nicole M. Iovine[16]; for the Infectious Diseases Society of America, Pediatric Infectious Diseases Society, and the Society for Healthcare Epidemiology of America

[1]Montefiore Medical Center, Albert Einstein Medical Center, Bronx, New York; [2]Vanderbilt University Medical Center, Nashville, Tennessee; [3]Research and Medical Services Veterans Affairs Medical Center, [4]Departments of Medicine, Pharmacology, Molecular Biology and Microbiology, Case Western Reserve University, and [5]Cleveland Geriatric Research Education and Clinical Center, Case Western Reserve University–Cleveland Veterans Affairs Medical Center, Center for Antimicrobial Resistance and Epidemiology, Ohio; [6]Johns Hopkins University School of Medicine, Baltimore, Maryland; [7]Carolinas Health Care System, Charlotte, North Carolina; [8]Tufts Medical Center, Boston, Massachusetts; [9]Providence-Portland Medical Center and [10]Oregon Health Sciences University, Portland; [11]Infectious Diseases Society of America, Arlington, Virginia; [12]Harborview Medical Center, University of Washington, Seattle; [13]HCA Healthcare, Nashville, Tennessee; [14]Texas A&M College of Medicine, Houston; [15]TeleMed2U, Roseville, California; and [16]University of Florida College of Medicine, Gainesville

Clinical Infectious Diseases® 2018;66(7):995–1003

Türkiye'de…

TMC, KLİMUD, HİDER, KLİMİK
toplantılar, kurslar düzenledi

ANTİMİKROBİYAL YÖNETİM SİMPOZYUMU

ANTIMICROBIAL STEWARDSHIP

6-8 EKİM 2016, İSTANBUL

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Istanbul, Turkey
5 – 6 October 2017

Türkiye'de AMY programları

Chapter 19.25

Antimicrobial Stewardship in Turkey

Önder Ergönül*, Füsun Can* and Murat Akova**
*Koç University, Istanbul, Turkey
**Hacettepe University, Ankara, Turkey

Turkey is a midincome country with 79 million inhabitants, located between Europe and Asia. The proportion of the health expenditures in gross national product was reported as 6.1% in 2010. Public sector funding of total health expenditures in 2010 was 75% [1]. The population is covered for free access to health care and has access to a family physician. Besides universal coverage, private insurance or self-paying is also common.

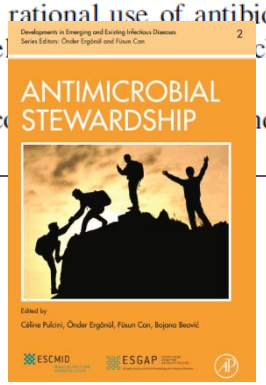
By 2010, the Social Security Institution had contracted with 421 private hospitals (90% of large hospitals) to provide care and complex emergency services such as burn care, intensive care, cardiovascular surgery, and neonatal care. The average length of stay was 4.1 days in 2010, with 65% occupancy.

Antibiotics are the most commonly consumed drugs in Turkey [2]. According to the 2011 data, Turkey has the highest antibiotic consumption rate among eastern European, non-EU countries, as 42 DID/1000 inhabitants [3]. This is 3.5 times higher than Netherlands, which has the lowest DID value. The most commonly used antibiotics among outpatients were penicillins and other beta-lactams with extended spectrum (31.4 DID), macrolides (3.9 DID), and fluoroquinolones (3.6 DID). Strict price regulations for antibiotics and also any other drugs for human use are enforced by the government, and prices per unit are comparatively cheaper than European countries. Generic antibiotics are used preferentially both in and out of hospital settings due to cost concerns. Antibiotic consumption is significantly different between the regions in Turkey and the most common at the southeast regions of Turkey [2].

In 2003, Ministry of Health of Turkey started a nationwide antibiotic restriction program in hospitals. According to this program, carbapenems, glycopeptides, piperacillin/tazobactam, and ticarcillin/clavulanate are defined as

We can summarize the significant steps to be taken for AMS in Turkey, mainly under three headings:

1. Surveillance: Epidemiological studies should be performed to quantify antibiotic consumption and track antibiotic resistance. These data can be used to compare results with other countries.
   a. Effectiveness of national programs should be monitored, and relevant actions should be developed.
2. Health services:
   a. Sales of antibiotics over the counter (OTC) have been prohibited since 2015 in Turkey, but the prohibition of OTC sales should be monitored and sustained.
   b. The national antibiotic restriction program in hospitals is unique, and early reports were promising [4]; however, the program should be enhanced and revised based on new data and issues.
   c. Rapid diagnostic tests should be promoted and should be compensated by insurance systems.
   d. Implementation of antibiotic stewardship program should be an indicator of health-care quality control at local and national levels.
3. Education: The Ministry of Health of Turkey has defined a detailed and active education plan for rational use of drugs since 2011.
   a. Effective education programs for the rational use of antibiotics should be implemented at undergraduate level[illegible]chools, pharmacy, and nursing schools.
   b. Taking a "rational use of antibiotics c[illegible]ndatory in all medical residency programs.



Türkiye'de AMY programları

ARTICLE IN PRESS

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journal homepage: www.ajicjournal.org

Major Article

Implementation of an antimicrobial stewardship program for patients with febrile neutropenia

Bahar Madran RN [a], Şiran Keske MD [a], Gizem Tokça RN [a], Ebru Dönmez RN [a], Burhan Ferhanoğlu MD [b], Mustafa Çetiner MD [c], Nil Molinas Mandel MD [d], Önder Ergönül MD, MPH [e,*]

Türkiye'den ilk (?) ve tek (?) örnek

Key Words:
Febrile
neutropenia
antimicrobial
stewardship
outcome

Background: We aimed to describe the effectiveness of our standardized protocol for febrile neutropenia (FN), which was targeted to minimize unintended outcomes and reduce antimicrobial consumption.
Methods: The study was performed in a private hospital with 300 beds. We included all adult hematologic and oncologic cancer inpatients admitted between January 1, 2015-December 31, 2015, and January 1, 2016-May 31, 2017. The outcomes of the study were fatality, infections, and adherence to the antimicrobial stewardship program (ASP).
Results: We included 152 FN attacks of 95 adult inpatients from hematology and oncology wards; of these, 43% were women, and the median age was 57 years. The case fatality rate was 30% in the pre-ASP period and decreased to 11% in the post-ASP period ($P = .024$). The appropriate adding or changing ($P = .006$) and appropriate continuation or de-escalation or discontinuation of antimicrobials improved ($P < .001$). In the post-ASP period, *Staphylococcus* spp infections (from 22% to 8%, $P = .02$) and gram-negative infections decreased (from 43% to 20%, $P = .003$). In the multivariate analysis, appropriate continuation or de-escalation or discontinuation was increased in the post-ASP period (odds ratio [OR], 4.3; 95% confidence interval [CI], 1.82-10.41; $P = .001$), and gram-positive infections were decreased (OR, 0.32; 95% CI, 0.11-0.95, $P = .041$). Vancomycin and fluoroquinolone use decreased significantly.
Conclusions: After implementation of the ASP, the case fatality rate among the patients with FN decreased. Appropriate antimicrobial use increased and overall antimicrobial consumption was reduced. Bacterial infections and *Candida* infections decreased.

ABD (IDSA-SHEA) Rehberi

Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America

Tamar F. Barlam,[1,a] Sara E. Cosgrove,[2,a] Lilian M. Abbo,[3] Conan MacDougall,[4] Audrey N. Schuetz,[5] Edward J. Septimus,[6] Arjun Srinivasan,[7] Timothy H. Dellit,[8] Yngve T. Falck-Ytter,[9] Neil O. Fishman,[10] Cindy W. Hamilton,[11] Timothy C. Jenkins,[12] Pamela A. Lipsett,[13] Preeti N. Malani,[14] Larissa S. May,[15] Gregory J. Moran,[16] Melinda M. Neuhauser,[17] Jason G. Newland,[18] Christopher A. Ohl,[19] Matthew H. Samore,[20] Susan K. Seo,[21] and Kavita K. Trivedi[22]

- Toplam öneri: **28**
  - Güçlü öneriler: **5**
  - Zayıf öneriler: **18**
- "Good practice" önerileri: **5**

Clinical Infectious Diseases℠ 2016;62(10):e51–e77

News

IDSA/SHEA Guidelines on Antibiotic Stewardship Released

Susan London
April 14, 2016

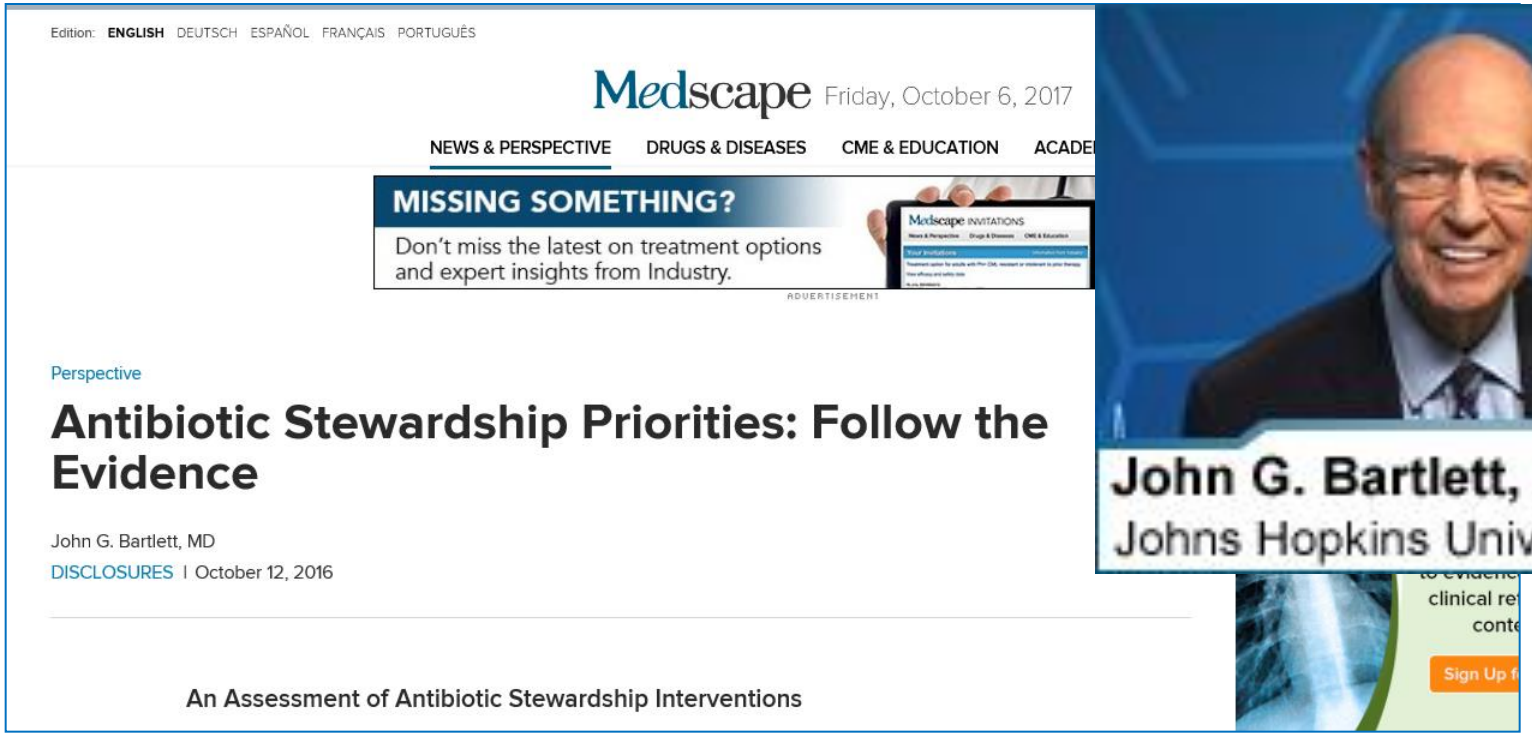
5 Comments

New national guidelines on ar… approach to the issue, offering pragmatic advice and endorsing programs tailored to each institution's unique situation.

"I hope that these guidelines will set a foundation for programs, both in existence and just being implemented, to really look through this menu and see what works for them," lead author Tamar Barlam, MD, told *Medscape Medical News*. "And ultimately, what we all hope is that they improve antibiotic use, so that patients have better outcomes and less resistance."

Toplam öneri: **28**
Güçlü öneriler: **5**
Zayıf öneriler: **18**
"Good practice" önerileri: **5**

The panel gave most of the recommendations a "weak" rating, even though some of the underpinning interventions had positive results in randomized trials, Dr Barlam noted. "We were looking to see if an intervention had proven effective as a stewardship intervention," she explained. "When you looked at it from that lens, we really had very few recommendations that were strong recommendations."



visits for URIs, sinusitis, or bronchitis.[12] Data to evaluate antibiotic stewardship activities are evolving rapidly. The 2016 guidelines have 225 references, but only nine citations are dated after 2014, calling attention to the need for timely recommendation updates.

Güçlü öneriler

I. Does the Use of Preauthorization and/or Prospective Audit and Feedback Interventions by ASPs Improve Antibiotic Utilization and Patient Outcomes?
Recommendation

1. We recommend preauthorization and/or prospective audit and feedback over no such interventions *(strong recommendation, moderate-quality evidence).*

V. Should ASPs Implement Interventions Designed to Reduce the Use of Antibiotics Associated With a High Risk of CDI?
Recommendation

5. We recommend antibiotic stewardship interventions designed to reduce the use of antibiotics associated with a high risk of CDI compared with no such intervention *(strong recommendation, moderate-quality evidence).*

XI. Should ASPs Implement Interventions to Increase Use of Oral Antibiotics as a Strategy to Improve Outcomes or Decrease Costs?
Recommendation

12. We recommend ASPs implement programs to increase both appropriate use of oral antibiotics for initial therapy and the timely transition of patients from IV to oral antibiotics *(strong recommendation, moderate-quality evidence).*

IX. In Hospitalized Patients Requiring Intravenous (IV) Antibiotics, Does a Dedicated Pharmacokinetic (PK) Monitoring and Adjustment Program Lead to Improved Clinical Outcomes and Reduced Costs?
Recommendations

9. We recommend that hospitals implement PK monitoring and adjustment programs for aminoglycosides *(strong recommendation, moderate-quality evidence).*

XIII. Should ASPs Implement Interventions to Reduce Antibiotic Therapy to the Shortest Effective Duration?
Recommendation

14. We recommend that ASPs implement guidelines and strategies to reduce antibiotic therapy to the shortest effective duration *(strong recommendation, moderate-quality evidence).*

Hangi yöntem?

Kısıtlama mı?

Prospektif değerlendirme ve geri bildirim mi (**ikna mı**)?

I. Does the Use of Preauthorization and/or Prospective Audit and Feedback Interventions by ASPs Improve Antibiotic Utilization and Patient Outcomes?

Recommendation

1. We recommend preauthorization and/or prospective audit and feedback over no such interventions *(strong recommendation, moderate-quality evidence)*.

➢ İkisi de hiçbir şey yapmamaktan iyidir

Clinical Infectious Diseases™ 2016;62(10):e51–e77

IV antibiyotikler için PK monitorizasyon

IX. In Hospitalized Patients Requiring Intravenous (IV) Antibiotics, Does a Dedicated Pharmacokinetic (PK) Monitoring and Adjustment Program Lead to Improved Clinical Outcomes and Reduced Costs?

Recommendations

9. We recommend that hospitals implement PK monitoring and adjustment programs for aminoglycosides *(strong recommendation, moderate-quality evidence).*
10. We suggest that hospitals implement PK monitoring and adjustment programs for vancomycin *(weak recommendation, low-quality evidence).*

Aminoglikozitler ve vankomisin için düzey takibi önemli

Clinical Infectious Diseases™ 2016;62(10):e51–e77

Oral tedavi

XI. Should ASPs Implement Interventions to Increase Use of Oral Antibiotics as a Strategy to Improve Outcomes or Decrease Costs?

Recommendation

12. We recommend ASPs implement programs to increase both appropriate use of oral antibiotics for initial therapy and the timely transition of patients from IV to oral antibiotics *(strong recommendation, moderate-quality evidence)*.

Oral tedavi

- Başlangıç tedavisi olarak
- Ardışık tedavide PE'den sonra

Avantajları

- İlaç maliyeti daha düşük
- Yatış süresi daha kısa

Tedavi süreleri

XIII. Should ASPs Implement Interventions to Reduce Antibiotic Therapy to the Shortest Effective Duration?

Recommendation

14. We recommend that ASPs implement guidelines and strategies to reduce antibiotic therapy to the shortest effective duration *(strong recommendation, moderate-quality evidence).*

Tedavi süreleri etkin olan en kısa süreye kısaltılmalıdır

Table 2. Meta-analyses and Examples of Randomized Clinical Studies Comparing Shorter Versus Longer Duration of Antibiotics

Reference	Clinical Condition/Population	Treatment Duration, d	Clinical Outcome[a]
Meta-analyses			
Dimopoulos et al, 2008 [123]	Adults and children with CAP	3–7 vs 5–10	Clinical success, relapse, mortality, adverse events
Pugh et al, 2011 [124]	Adults with VAP	7–8 vs 10–15	Antibiotic-free days[b], recurrence[b]
Dimopoulos et al, 2013 [125]	Adults with VAP	7–8 vs 10–15	Relapse, mortality, antibiotic-free days[c]
Randomized clinical trials			
Chastre et al, 2003 [127]	Adults with VAP	8 vs 15	Mortality, recurrent infections[d]
El Moussaoui et al, 2006 [128]	Adults with CAP	3 vs 5	Clinical and radiological success
Greenberg et al, 2014 [129]	Children with CAP	5 vs 10	Treatment failure[e]
Hepburn et al, 2004 [130]	Adults with cellulitis	5 vs 10	Clinical success
Sandberg et al, 2012 [131]	Adult females with acute pyelonephritis	7 vs 14	Clinical efficacy, adverse events
Talan et al, 2000 [132]	Women with acute uncomplicated pyelonephritis	7 vs 14	Bacteriologic and clinical cure[f]
Runyon et al, 1991 [133]	Adults with spontaneous bacterial peritonitis	5 vs 10	Mortality, bacteriologic cure, recurrence
Saini et al, 2011 [134]	Neonatal septicemia	2–4 vs 7 (with sterile culture)	Treatment failure
Sawyer et al, 2015 [135]	Adults with intra-abdominal infection	4 vs ≤10	Composite of surgical site infection, recurrent intra-abdominal infection, or death
Bernard et al, 2015 [136]	Adults with vertebral osteomyelitis	42 vs 84	Cure at 1 y by independent committee and secondary outcomes

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“Zayıf” öneriler

Klinik tablolara özgü algoritmalar

IV. Should ASPs Implement Interventions to Improve Antibiotic Use and Clinical Outcomes That Target Patients With Specific Infectious Diseases Syndromes?

Recommendation

4. We suggest ASPs implement interventions to improve antibiotic use and clinical outcomes that target patients with specific infectious diseases syndromes *(weak recommendation, low-quality evidence).*

Antibiyotik gerekmeyen durumlara ilişkin öneriler de belirlenmelidir

Örneğin

- Asemptomatik bakteriüri
- Sürveyans amacıyla alınmış sürüntü örneklerindeki üremeler

Örneğin

- Toplum kökenli pnömoni
- Hastane kökenli pnömoni
- Selülit
- Tonsillofarenjit
- Üriner sistem enfeksiyonu

gibi hastalıklara özel **tanı/tedavi** algoritmaları

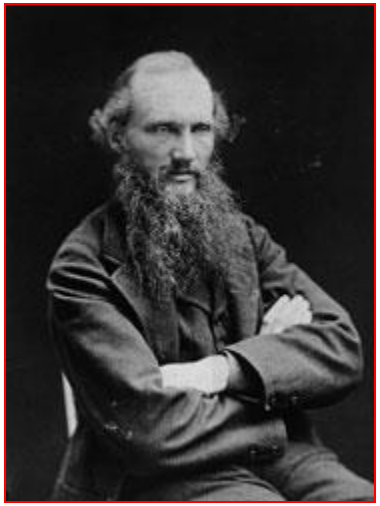
Clinical Infectious Diseases™ 2016;62(10):e51–77

Kümülatif (Stratified) Antibiyogram

XIV. Should ASPs Work With the Microbiology Laboratory to Develop Stratified Antibiograms, Compared With Nonstratified Antibiograms?

Recommendation

15. We suggest development of stratified antibiograms over solely relying on nonstratified antibiograms to assist ASPs in developing guidelines for empiric therapy *(weak recommendation, low-quality evidence)*.



Yaşa, hastalığa, birime, örnek türüne... göre antibiyogramlar geliştirilebilir

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Otomatik order (Stop orders)

VI. Do Strategies to Encourage Prescriber-Led Review of Appropriateness of Antibiotic Regimens, in the Absence of Direct Input From an Antibiotic Stewardship Team, Improve Antibiotic Prescribing?

Recommendation

6. We suggest the use of strategies (eg, antibiotic time-outs, stop orders) to encourage prescribers to perform routine review of antibiotic regimens to improve antibiotic prescribing *(weak recommendation, low-quality evidence).*

Antibiyotik rotasyonu

VIII. Should ASPs Implement Strategies That Promote Cycling or Mixing in Antibiotic Selection to Reduce Antibiotic Resistance?

Recommendation

8. We suggest against the use of antibiotic cycling as a stewardship strategy *(weak recommendation, low-quality evidence).*

Direnci azaltmak üzere antibiyotiklerin siklik kullanımı ÖNERİLMEMEKTEDİR

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Antibiyotik kullanım ölçütü olarak DDD mi? DOT mu?

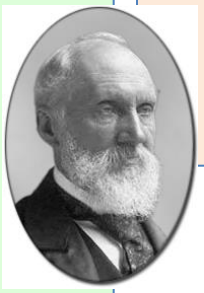
XX. Which Overall Measures Best Reflect the Impact of ASPs and Their Interventions?

Recommendation

21. We suggest monitoring antibiotic use as measured by days of therapy (DOTs) in preference to defined daily dose (DDD) *(weak recommendation, low-quality evidence).*

DDD: Daily Defined Dose

- **DSÖ** tarafından öneriliyor
- Birim bazında yapılabildiği için DOT'tan daha kolay
- Yaygın kullanıldığı için karşılaştırma yapılabiliyor
- Çocuk dozları için uygun değil



DOT: Days of Therapy

- Doz düzenlemelerinden etkilenmediği için hem pediatrik hem erşkin hastalarda kullanılabilir
- **CDC,** DOT olarak rapor ediyor
- Verinin hasta bazında elde edilmesi gerekiyor; her yerde yapılamayabilir

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Hangi ölçütler?

Table 3. Possible Metrics for Evaluation of Interventions to Improve Antibiotic Use and Clinical Outcomes in Patients With Specific Infectious Diseases Syndromes

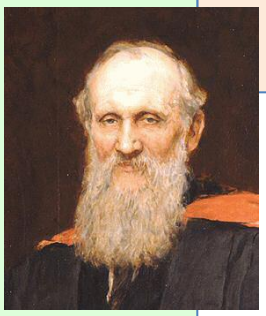
Process Measures	Outcome Measures
Excess days of therapy (ie, unnecessary days of therapy avoided based on accepted targets and benchmarks)[a]	Hospital length of stay
Duration of therapy	30-day mortality
Proportion of patients compliant with facility-based guideline or treatment algorithm[a]	Unplanned hospital readmission within 30 d
Proportion of patients with revision of antibiotics based on microbiology data	Proportion of patients diagnosed with hospital-acquired *Clostridium difficile* infection or other adverse event(s) related to antibiotic treatment[a]
Proportion of patients converted to oral therapy	Proportion of patients with clinical failure (eg, need to broaden therapy, recurrence of infection)

Süreç ölçütleri

- **Fazladan** tedavi süresi
- Tedavi süresi
- Kurumdaki tedavi algoritmasına uyum oranları
- Lab.sonuçlarına göre ilaç modifikasyon oranları
- Oral tedaviye geçen hasta oranları

Sonuç ölçütleri

- Hastanede kalış süresi
- 30 günlük mortalite
- *C.difficile* enf..vb
- Tedavi yetersizliği, rekürrens..vb



Clinical Infectious Diseases℠ 2016;62(10):e51–e77

“İyi uygulama” önerileri

‘End of life antibiotic treatment’

XXVII. Should ASPs Implement Interventions to Reduce Antibiotic Therapy in Terminally Ill Patients?

Recommendation

28. In terminally ill patients, we suggest ASPs provide support to clinical care providers in decisions related to antibiotic treatment *(good practice recommendation)*.

- Terminal dönem malignite hastalarında
- İleri derecede demansı olan yaşlı hastalarda

  yaşamın uzaması beklentisi olmadığına göre antibiyotikler ile ilgili nasıl bir yol izlenmeli?

Clinical Infectious Diseases℠ 2016;62(10):e51–e77

Kaçırdığıma üzüldüm!

İKİNCİ GÜN **29 Mart 2018, Perşembe**

	SALON A	SALON B	SALON C
15.00 - 16.30	**Simpozyum 10** **Olgularla Transplantasyon İnfeksiyonları** *Öğrenim Hedefleri* Bu oturumun sonunda katılımcılar: • Olgular eşliğinde organ transplantasyonları sonrasında gelişen infeksiyonları, yönetimini ve infeksiyon gelişiminin engellenmesi amacıyla yapılacakları öğrenir. Oturum Başkanları **Vildan AVKAN-OĞUZ, Yaşar BAYINDIR** Olgu **Kıvanç ŞEREFHANOĞLU** Olgu **Safiye KOÇULU** Olgu **Servet ALAN**	**Simpozyum 11** **Yoğun Bakımda Sorunlu Alanlar: Terminal Dönem Hasta** *(Türk Yoğun Bakım Derneği ve Türkiye Biyoetik Derneği İşbirliğiyle Düzenlenmiştir)* *Öğrenim Hedefleri* Bu oturumun sonunda katılımcılar: • Terminal dönem (yaşamın sonuna gelmiş) hasta tanımını, • Hangi hastaların bu kapsamda değerlendirilebileceğini, • Bu hastaların yoğun bakımlar ve sağlık hizmeti sunumu açısından ne tür zorluklara neden olduğunu, • Bu hastalara destek tedavilerin ne kadar, ne zamana kadar ve nasıl verilmesi gerektiğini, destek tedavileri sonlandırmanın tıbbi koşullarını ve kurallarını, • Bu hastalarda gelişen infeksiyonların yönetimini, antibiyotik seçiminde nelere dikkat edilmesi gerektiğini, antibiyotik tedavisini sonlandırma kararının hangi durumlarda nasıl alınabileceğini, • Terminal dönem hastaya tıbbi bakım verirken veya sonlandırırken etik açıdan dikkat edilmesi gereken kuralları, yaşanabilecek etik sorunları ve bunların çözümlerini öğrenir. Oturum Başkanları **Üner KAYABAŞ, Necmettin ÜNAL** Antibiyotikler Nereye Kadar? **Hande ARSLAN** Destek Tedaviler Nereye Kadar **Tuğhan UTKU** Tıbbi Etik Penceresinden Terminal Dönem Hasta, **Yasemin YALIM**	**Simpozyum 12** **SSS ve Viruslar: Hiç Kolay Değil!** *Öğrenim Hedefleri* Bu oturumun sonunda katılımcılar: • Batı Nil virusu infeksiyonlarının ülkemizde ve dünyadaki son durumunu, klinik görünümlerini ve hangi durumlarda aklımıza gelmesi gerektiğini, • Viral MSS infeksiyonlarının tanısında kullanılan tüm mikrobiyolojik yöntemleri, hangi durumda hangi testlerin istenilmesinin gerektiği ve bu yöntemlerin ne kadar ve ne şekilde ulaşılabilir olduğunu, • Viral infeksiyonların tetiklediği immün aracılı SSS hastalıklarını, bunların klinik görünümlerini ve infeksiyöz durumlardan ne şekilde ayırt edilebileceğini öğrenir. Oturum Başkanları **Osman Şadi YENEN, Şükran KÖSE** Batı Nil Ateşi **Yusuf Ziya DEMİROĞLU** Viral İnfeksiyonların Tanısı **Dilek MENEMENLİOĞLU** İmmun Aracılı SSS Hastalıkları **Murat KÜRTÜNCÜ**

Infection (2016) 44:395–439
DOI 10.1007/s15010-016-0885-z

GUIDELINE

Strategies to enhance rational use of antibiotics in hospital: a guideline by the German Society for Infectious Diseases

K. de With[1] · F. Allerberger[2] · S. Amann[3] · P. Apfalter[4] · H.-R. Brodt[5] · T. Eckmanns[6] · M. Fellhauer[7] · H. K. Geiss[8] · O. Janata[9] · R. Krause[10] · S. Lemmen[11] · E. Meyer[12] · H. Mittermayer[4] · U. Porsche[13] · E. Presterl[14] · S. Reuter[15] · B. Sinha[16] · R. Strauß[17] · A. Wechsler-Fördös[18] · C. Wenisch[19] · W. V. Kern[20]

AMY ekibi kimlerden oluşmalı?

1 Requirements

1.1 Availability of a team of ABS experts

The team should consist of at least one infectious diseases physician (or clinician with infectious diseases training) and an experienced clinical pharmacist/hospital pharmacist, as well as a specialist in microbiology, virology and infection epidemiology being responsible for laboratory diagnostic and microbiological consultation; furthermore, the physician

Various ABS programmes describe an FTE of 0.5 per 250 beds as being the minimum staff resources necessary to cost-effectively conduct an ABS programme.

Türkiye'de günlük pratikte

- Klinik eczacı sayısı çok az
- Enfeksiyon kontrolünden **de** EHU sorumlu

- 250 yatak için 0.5 FTE
- FTE: Full time equivalent

- **Enf. Hast. uzmanı**
- **Klinik eczacı**
- Mirobiyoloji uzmanı
- Epidemiyolog
- Enf. Kontrol doktoru

Infection (2016) 44:395–439

Sürveyans- Antibiyotik tüketimi takibi

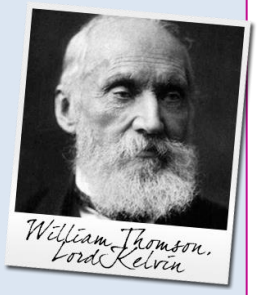
1.2 Availability of surveillance data on pathogens, resistance, and antimicrobial consumption

Conducting an additional material analysis (e.g. number of blood culture sets per patient or 1000 patient-days, number of urine cultures per patient, number of catheter-associated urine cultures, etc.) also with regard to

Use density should be presented by antibiotic class and not only by individual agent.
Reporting consumption data and antiinfective costs ranked by individual agent or class (e.g. top 5 or 10) is also reasonable.
Point prevalence surveys are a simple tool to examine process quality.

- **Alınan kültür sayısı** izlenmeli: örneğin 1000 hasta gününde alınan kan, idrar kültürü…vb

- Direnç verileri –en azından- **yıllık** bazda ulaşılabilir olmalı
- Bölüm, etken, örnek türüne..vb göre raporlandırılmalı

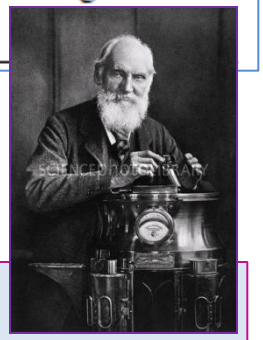


- **Sürveyans** örnekleri ayrı rapor edilmeli
- Sürveyans sistemi önemli
- Tüketilen ant miktarları **grup bazında** da izlenmeli

Klinik tablo bazında tüketilen antibiyotik takibi

Table 4 Examples for performing targeted proactive audits of antiinfective use

- Perioperative antibiotic prophylaxis in selected surgical fields
- Targeted therapy of bacteremic patients hospital-wide
- Community-acquired pneumonia in the emergency department
- Sequential therapy on general wards with antibiotics of high bioavailability

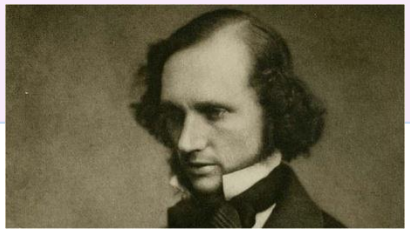


- En çok tüketilen 5 veya 10 antibiyotik listesi rapor edilebilir
- 3 aylık, 6 aylık, yıllık..vb olabilir

Nokta prevelans ile

- Cerrahi profilaksi için kullanılan atb'ler
- Bakteriyemilerde kullanılan atb'ler
- Acil serviste pnömoni için önerilen atb'ler
- Ardışık olarak oral tedaviye geçme oranı izlenebilir

Örnek: 3 aylık dilimler halinde en sık kullanılan anyibiyotik grupları



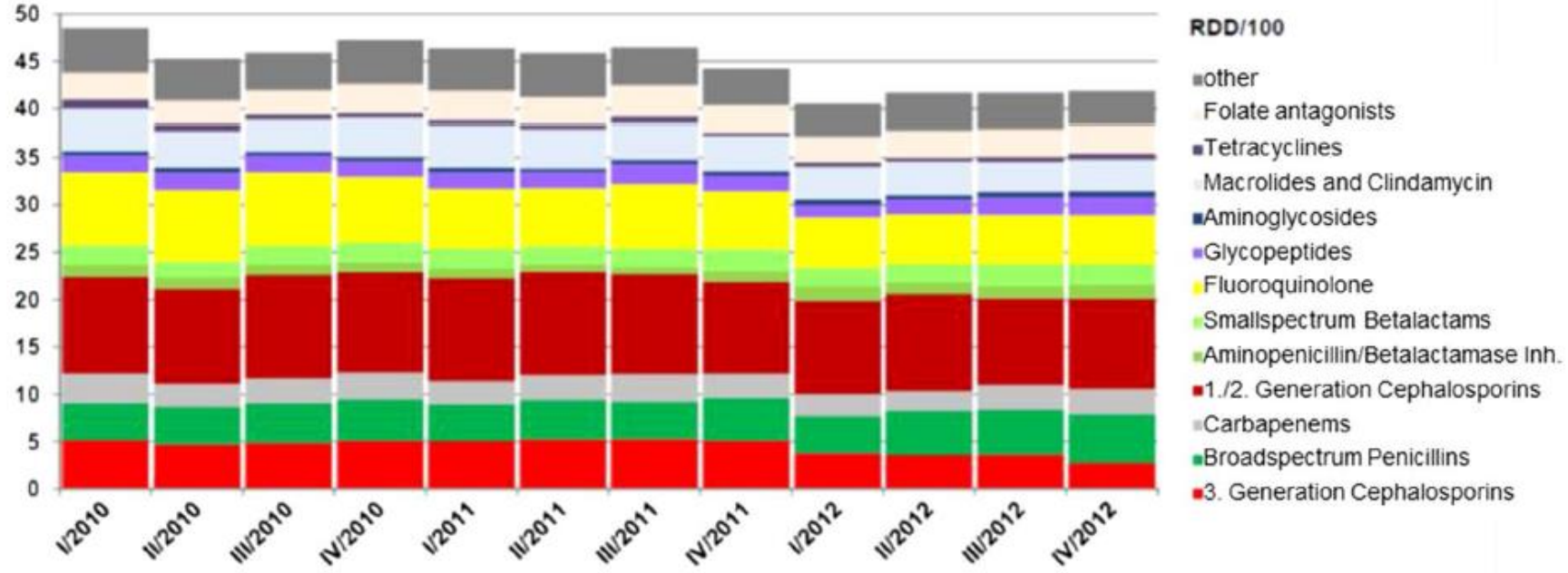


Fig. 1 Graphical presentation of quarterly use density (RDD/100 patient-days) for different antibiotic classes

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Hastane formüleri (klinik eczacı tarafından) oluşturulmalı

Formülerde ilaçla ilgili sunulması gereken temel bilgiler:

- Jenerik adı (çoğu zaman ticari adlarıyla birlikte)
- Farmasötik formu
- Yitiliği
- Temel farmakodinamik/farmakokinetik özelliği
- Temel endikasyon(lar)ı
- Kontrendikasyon(lar)ı
- Kullanım şekli
- Talimat ve uyarılar
- Dikkatli olunması gereken durum(lar)ı
- Advers/yan etkiler
- İlaç etkileşmeleri

Formülerde ilaçla ilgili sunulması gereken ilave bilgiler:

- Fiyatı
- Geri ödeme durumu
- Reçete kategorisi
- Saklama koşulları
- Raf ömrü
- Hasta bilgisi
- Etiket bilgisi
- Temel ilaç listesinde bulunma durumu
- Üretici firma bilgileri

Formüler örneği

Table 2 Example of a formulary

Antibiotic (AB)- Group	Appl.	Trade Name	Active agent	Recommended daily dose RDD		DTC
				Normal renal function CrCl > 80 ml/min	Impaired renal function CrCl 80-50 ml/min	
Penicillins	i.v. **oral**	Infectocillin **Penicillin V 1 Mega**	Benzylpenicillin **Phenoxymethyl penicillin**	3 x 10 million IU or 4 x 5 million IU **3 x 1 million IE**	2 x 10 million IU **3 x 1 million IU**	€€ **€**
Aminopenicillins	i.v. **oral**	Ampicillin **AmoxiHexal**	Ampicillin **Amoxicillin**	3 x 2 g **3 x 1 g**	2 x 2 g **3 x 1 g**	€€ **€**
Aminopenicillins + beta-lactamase inhibitors	i.v. **oral**	Ampicillin+ Sulbactam **Amoclav 500 plus**	Ampicillin/ Sulbactam **Amoxicillin/ Clavulanic acid**	3 x 2000/1000 mg **3 x 500/125 mg**	2 x 2000/1000mg **3 x 500/125 mg**	€€ **€**
Acylaminopenicillins	i.v.	Piperacillin	Piperacillin	3 x 4 g	2 x 4 g	€€
Acylaminopenicillins + beta-lactamase inhibitors	i.v.	Piperacillin+ Tazobactam	Piperacillin/ Tazobactam	3 x 4g/0,5 g	2 x 4g/0,5 g	€€
Carbapenems	i.v.	Meropenem	Meropenem	3 x 1 g for meningitis: 3 x2 g	4 x 500 mg	€€€€
Tetracycline	i.v. **oral**	DoxyHexal SF **DoxyHexal Tabs**	Doxycycline **Doxycycline**	**1 x 200 mg, then 100-200 mg/day**	no dose adjustment necessary	€ **€**
Aminoglycosides	i.v. i.v.	TobraCell Gentamicin	Tobramycin Gentamicin	1 x 5-6 mg/kg KG 1 x4,5 mg/kg KG	Confer with Senior physician	€€ €€
Nitroimidazoles	i.v. **oral**	Metronidazol **Metronidazol**	Metronidazole **Metronidazole**	3 x 500 mg **3 x 400 mg**	3 x 500 mg **3 x 400 mg**	€ **€**
Oxazolidinons	i.v. **oral**	Zyvoxid **Zyvoxid**	Linezolid **Linezolid**	2 x 600 mg **2 x 600 mg**	2 x 600 mg **2 x 600 mg**	€€€€ **€€€€**
Green: Recommended Antibiotic	As a matter of principle preference should be given to oral drugs, provided that the patient's condition allows					
Yellow: Reserve Antibiotic	The recommended daily dose refers to an adult patient (~ 70 kg)					
Red: Special Antibiotic, Confer with senior physician	DTC: Daily Therapeutic Cost DTC: €: 0 to €2; €€: 2 to €10; €€€: 10 to €25; €€€€: 25 to €50; €€€€€: more than 50 € to €150					
Bold	Available oral antibiotics					

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Tedavi optimizasyonu

3.1 Special programmes for treatment optimisation

De-escalation includes conversion from an empirical combination therapy to targeted monotherapy based on knowledge of the microorganism isolated, susceptibility and infectious disease.

De-escalation should be initiated early on (after 48–72 h), which also includes discontinuation of initial therapy if diagnosis is not secured. Observational studies show that this strategy is not adopted in 20–60 % of cases.
De-escalation programmes should point out that depending on the exact diagnosis in some cases instead of de-escalation, escalation may in fact be necessary.

Prolonged infusion of beta-lactams (taking into account physico-chemical stability) is reasonable and recommended particularly in critically ill patients.
TDM can avoid under-/over-dosing and minimise organ toxicity.
Programmes for doses optimisation are cost-effective.

- Her zaman de-eskelasyon olmayabilir; eskalasyon da bir optimizasyondur
- Tedavi 48-72 saatte gözden geçirilmeli
- Uzamış infüzyon..vb uygulamalar değerlendirilmeli
- Serum düzeyi takibi önemli

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Bilgi sistemleri teknolojisi gerekli

3.4 Computerised information technology

The local treatment guideline and the antiinfective formulary should be readily electronically accessible from every clinical computer workstation.
For ABS activities or for surveillance and analysis of antimicrobial usage, computer physician order entry (CPOE) systems should be designed in such a way as to allow automated generation of exact lists of the antiinfectives used.
Surgical software should be utilisable in such a manner as to ensure that antibiotic prophylaxis is compliant with guidelines.
Computer-based expert systems cannot replace a physician's clinical judgement.

Elektronik ortamda

- Tedavi rehberlerine
- İlaç formülerine
- Sürveyans sonuçlarına
- ….

ulaşılabilmeli

Clinical Infectious Diseases

VIEWPOINTS

IDSA Infectious Diseases Society of America

hivma hiv medicine association

OXFORD

Combating Global Antibiotic Resistance: Emerging One Health Concerns in Lower- and Middle-Income Countries

Maya Nadimpalli,[1] Elisabeth Delarocque-Astagneau,[1] David C. Love,[2] Lance B. Price,[3] Bich-Tram Huynh,[1] Jean-Marc Collard,[4] Kruy Sun Lay,[5] Laurence Borand,[6] Awa Ndir,[7] Timothy R. Walsh,[8] and Didier Guillemot[1]; for the Bacterial Infections and antibiotic-Resistant Diseases among Young children in low-income countries (BIRDY) Study Group[a]

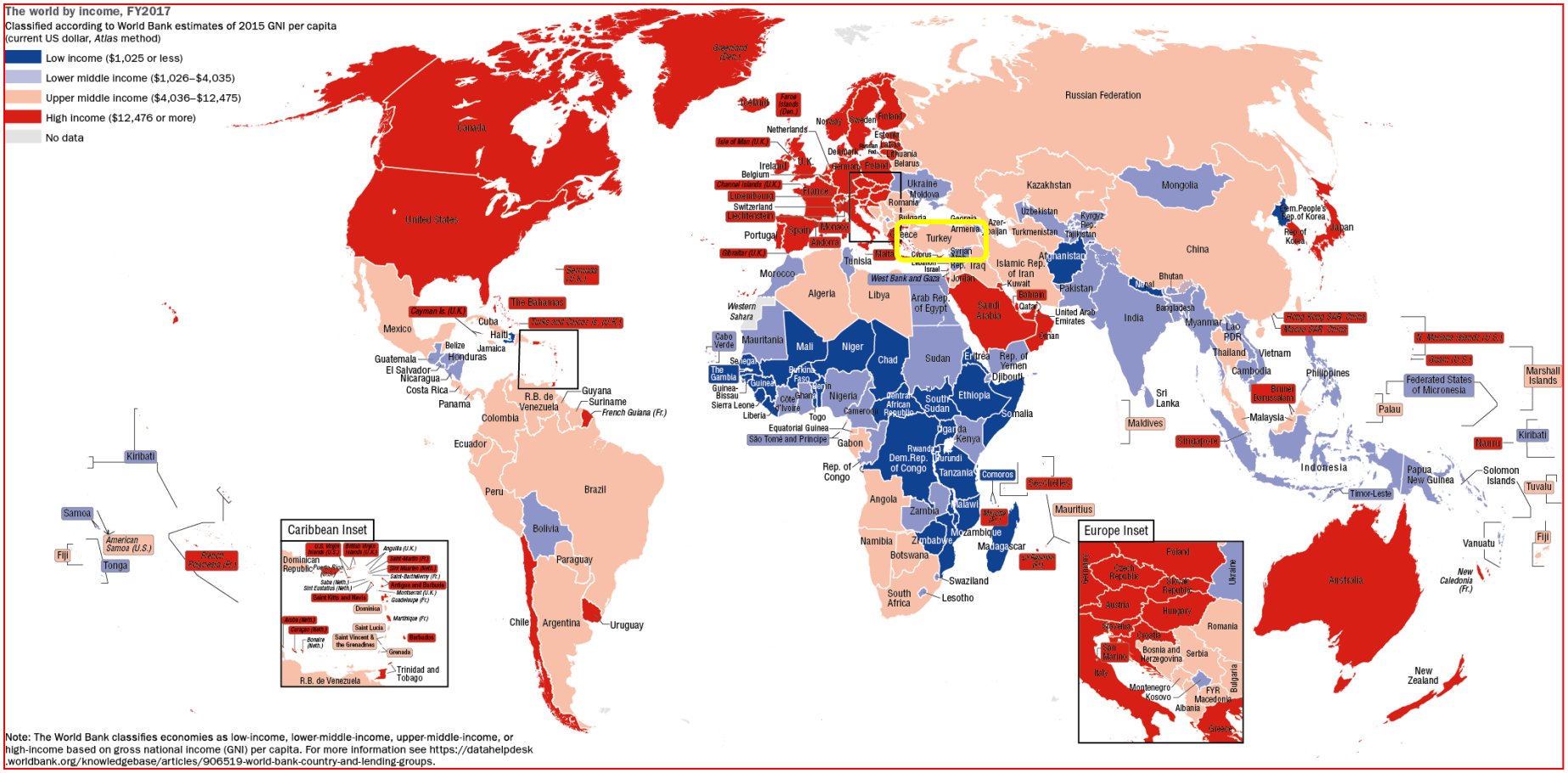
[1]Biostatistics, Biomathematics, Pharmacoepidemiology and Infectious Diseases Unit (B2PHI), Inserm, Université de Versailles Saint-Quentin-en-Yvelines (UVSQ), Institut Pasteur, Université Paris-Saclay, France; [2]Center for a Livable Future, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; [3]Milken Institute School of Public Health, George Washington University, Washington, District of Columbia; [4]Experimental Bacteriology Unit, Institut Pasteur of Madagascar, Antananarivo; [5]Food Microbiology and Water Analysis Laboratory and [6]Epidemiology and Public Health Unit, Institut Pasteur of Cambodia, Phnom Penh; [7]Institut Pasteur of Senegal, Dakar; and [8]Department of Medical Microbiology and Infectious Disease, Institute of Infection and Immunity, Heath Park Hospital, Cardiff, United Kingdom

Antibiotic resistance is a global public health issue. The need for higher-income countries to support lower- and middle-income countries (LMICs) in identifying actionable strategies has been recognized by major global public health institutions, including the US Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) [1, 2]. Because of unique structural, cultural, and socioeconomic factors contributing to the development of antibiotic resistance, it is widely acknowledged that LMICs require different approaches compared with higher-income countries [3–5]. Specifically, LMICs are challenged to improve antibiotic access for therapeutic uses while minimizing antibiotic misuse that causes population-level resistance [6]. Balancing these issues is critical; more children in LMICs countries die from inadequate access to antibiotics each year than drug-resistant infections [3], yet resistance threatens the long-term viability of these drugs. Most LMIC-specific strategies to date have focused on reducing antibiotic misuse in the human health sector [3, 6]. These include antimicrobial stewardship education, strengthened hospital infection control, and increased surveillance of antibiotic use and resistance, as

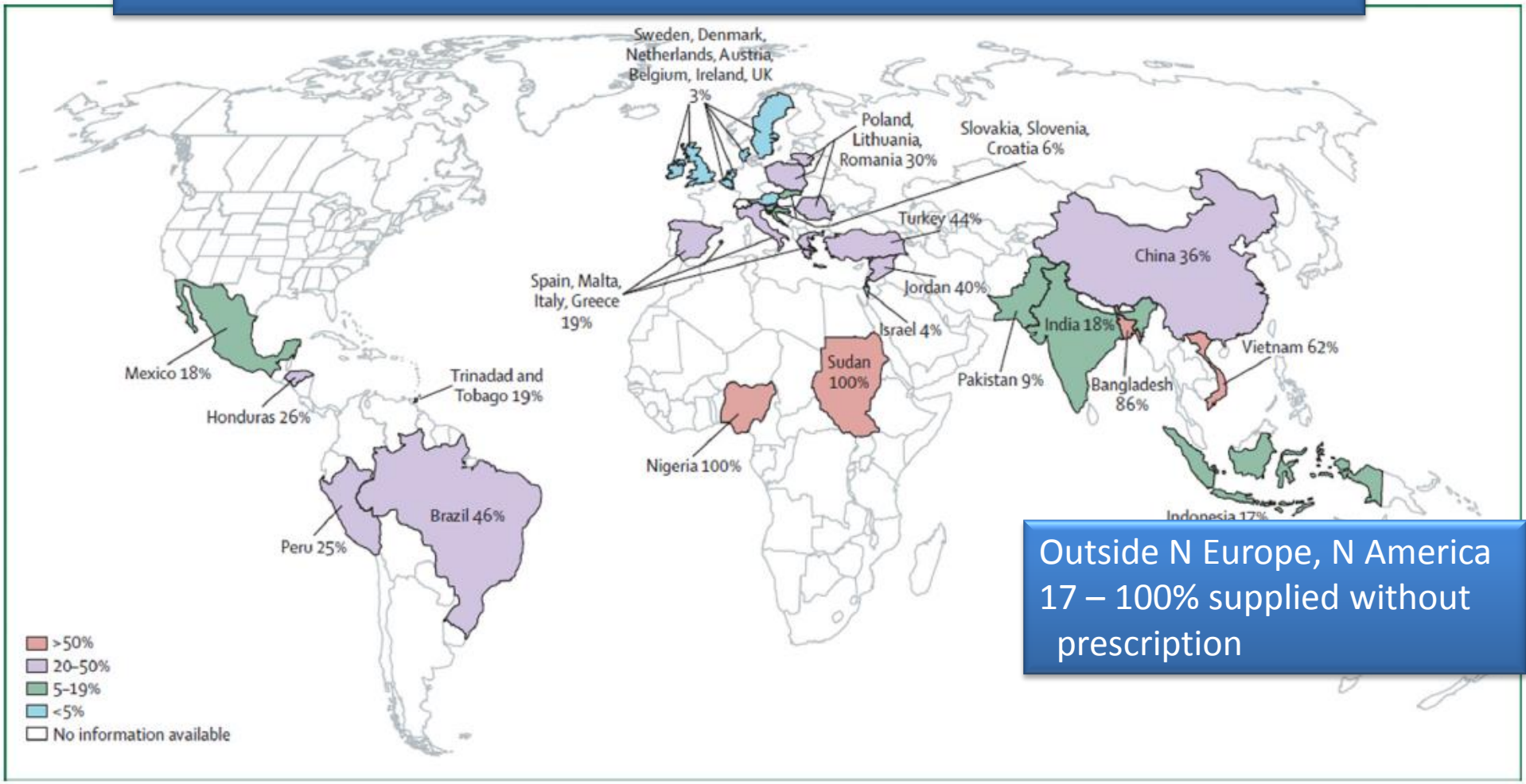
Gelir düzeyi yüksek olan ülkeler ile gelir düzeyi orta ve düşük olan ülkelerin sorunları da, yapması gerekenler de farklı!

Clinical Infectious Diseases® 2018;66(6):963–9

Dünya Bankası, 2017



Non prescription use in the community



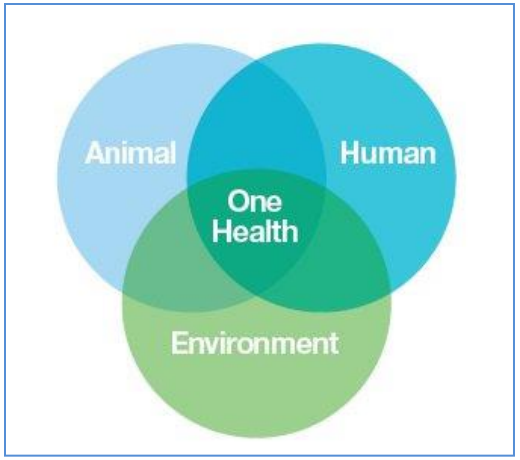
Outside N Europe, N America 17 – 100% supplied without prescription

Figure 2. Frequency of non-prescription use of antimicrobials in the general population based on published works

Morgan et al. Non-prescription antimicrobial use worldwide: a systematic review. Lancet Infect Dis 2011;11(9):692-701

The livestock industry in China, where half the world's pigs currently live, is expected to consume 30% of all veterinary antibiotics sold in 2030 [7]. Antibiotic use in food animals selects for antibiotic-resistant bacteria that may spread to humans via contact with animals [9], direct and indirect contact with waste [9–11], and food consumption [8] (Figure 1). Antibiotic misuse in animal agriculture in LMICs may disproportionately impact health due to lack of surveillance, frameworks for training farmers, biosecurity, and food safety regulation (Figure 2) [12–14]. The unregulated use of colistin to grow food animals in China, for example, has been linked to the emergence of novel colistin resistance mechanisms (*mcr*-1 and *mcr*-3) [15]; *mcr*-1 has now been detected worldwide among human colonization and infection isolates [16].

Clinical Infectious Diseases® **2018;66(6):963–9**



Dünya'daki domuzların yarısı Çin'de 2030 yılında veterinerlik alanında tüketilen antibiyotiklerin **%30**'unun Çin'de tüketileceği tahmin ediliyor

Clinical Infectious Diseases

IDSA FEATURES

Infectious Diseases Physicians: Leading the Way in Antimicrobial Stewardship

Belinda Ostrowsky,[1] Ritu Banerjee,[2] Robert A. Bonomo,[3,4,5] Sara E. Cosgrove,[6] Lisa Davidson,[7] Shira Doron,[8] David N. Gilbert,[9,10] Amanda Jezek,[11] John B. Lynch III,[12] Edward J. Septimus,[13,14] Javeed Siddiqui,[15] and Nicole M. Iovine[16]; for the Infectious Diseases Society of America, Pediatric Infectious Diseases Society, and the Society for Healthcare Epidemiology of America

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Table 3. Attributes of an Effective Leader

Commands the respect of peers
Inspires trust with all stakeholders
Motivates the team
Maintains a long-range perspective
Aligns and improves systems or develops new ones
Creates, anticipates, and recognizes opportunity

AMY ekibinin lideri:

Enfeksiyon hastalıkları uzmanı!

- Ekibi motive eden
- uzun vadeli düşünebilen
- Saygın
- .....

Clinical Infectious Diseases® 2018;66(7):995–1003

AMY programlarının liderleri olarak EHU "benzersiz" özellikleri

Table 4. Unique Expertise and Skills of Infectious Diseases Physicians as Leaders of Antimicrobial Stewardship Programs

Area of Expertise	Examples
Leadership	• Experience managing multidisciplinary teams as quality leaders and hospital epidemiologists • Regular interaction with hospital administration • Ability to influence the prescribing practices of other physicians • Routine connection with local and state health departments, the Centers for Disease Control and Prevention, and the World Health Organization
Clinical expertise	• Expertise in monitoring and managing patients with infections at all levels of complexity and across all healthcare settings • Understanding of appropriate prophylactic and other infection prevention strategies • Appreciation for the role of ASP in promoting and protecting public health
Microbiology and diagnostics	• Knowledge of microbiologic principles that inform rational antimicrobial prescribing • Knowledge of national and local resistance patterns • Ability to use diagnostic results to optimize antimicrobial prescribing • Expert knowledge about appropriate testing indications, interpretation of results, and cost • Understanding of traditional and next-generation diagnostics
Antimicrobials	• Comprehensive knowledge of antimicrobial use, side effects, cost, and adverse consequences • Awareness of national prescribing trends • Understanding of trends in national and local antimicrobial prescribing and resistance
Quality	• Ability to drive quality improvement and improve patient safety through optimal antimicrobial use • Awareness of the link between rational antimicrobial prescribing and quality measures (eg, central line–associated bloodstream infections, *Clostridium difficile* infection) • Ability to use quality measures and quality improvement activities to maximize ASP objectives

- Liderlik
- Klinik deneyim
- ……

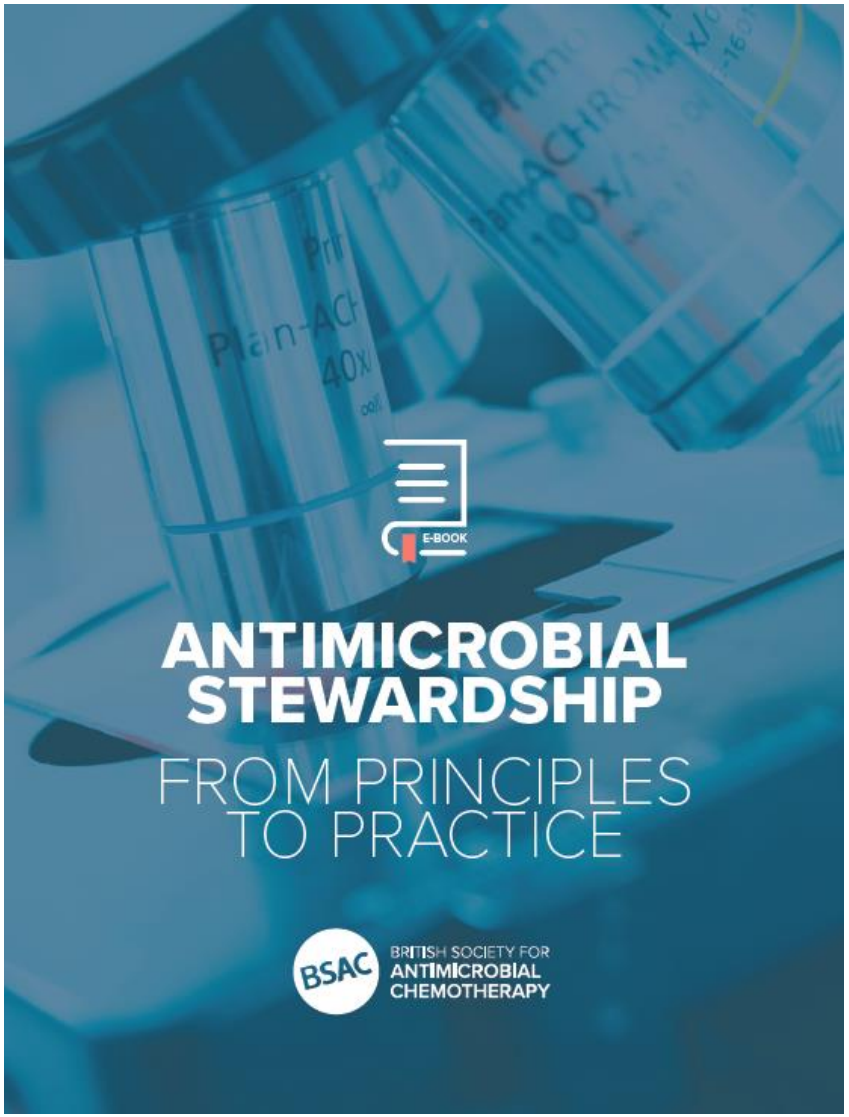
Clinical Infectious Diseases® 2018;66(7):995–1003

Kaç kişi görev almalı?

Table 6. Variables Influencing Full-Time Equivalent Needs

Facility Type
Facility and patient complexity • Number of beds • Case mix index • Number and diversity of prescribers • Average daily census • Referral patterns
Pharmacy support • Level of pharmacist training • Amount of ASP-dedicated full-time equivalents
Local resistance patterns
Clinical laboratory support
Determination of desired ASP activities • Compliance with ASP core elements • Enhanced approaches

Çok iyi hesaplanmalı!



THIS E-BOOK HAS BEEN DEVELOPED BY BSAC

BSAC BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY

IN COLLABORATION WITH ESGAP/ESCMID

ESGAP ESCMID STUDY GROUP FOR ANTIMICROBIAL STEWARDSHIP
European Society of Clinical Microbiology and Infectious Diseases

ESCMID MANAGING INFECTIONS PROMOTING SCIENCE

PLEASE NOTE THAT THE AUTHORS' CHAPTERS DO NOT REFLECT THE OPINION OF ANY ORGANISATIONS THEY MAY BE ALIGNED WITH

GLOSSARY OF TERMS

ACKNOWLEDGEMENT

No venture into creating such an ambitious project can be done without support of a good team. It has been said "a team is not a group of people who work together but rather a group of people who trust each other ".
Our team epitomises this. With that in mind on behalf of all the editors and the contributors I would like to acknowledge the diligent, persistent and patient support of BSAC colleagues – Tracey Guise, CEO; Sally Bradley, eLearning manager and Neil Watson without whom the transformation of the written word into a visually engaging eBook could not have been accomplished. **Thank you all.**

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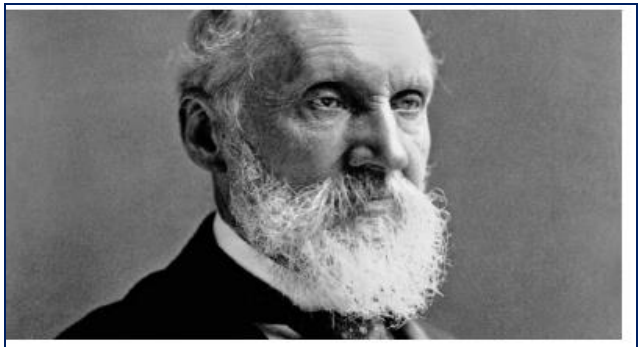


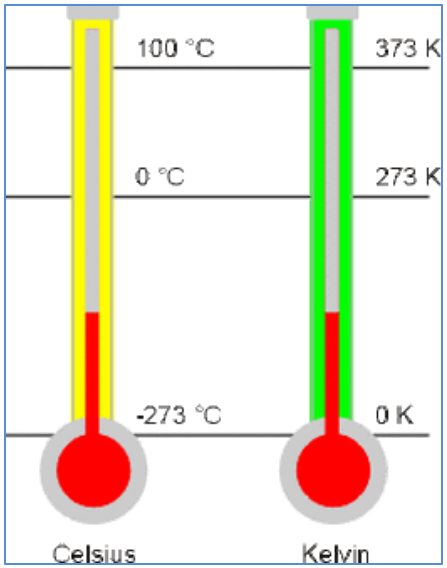
> *To measure is to know*

What Kelvin meant is how can we possibly know something, unless we measure it? In terms of antibiotic use: How can we possibly know about antibiotic prescribing unless we measure it?

On the importance of measurement Kelvin went further when he said:

> *When you can measure something and express it in numbers, you kno something about it. But when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind*

- Lord Kelvin (William Thomson) (1824-1907)
- "Mutlak sıfır"



Ölçmek bilmektir!

Ölçemezseniz geliştiremezsiniz!

> *If you cannot measure it, you cannot improve it*

Başarılı bir AMY programı için ipuçları

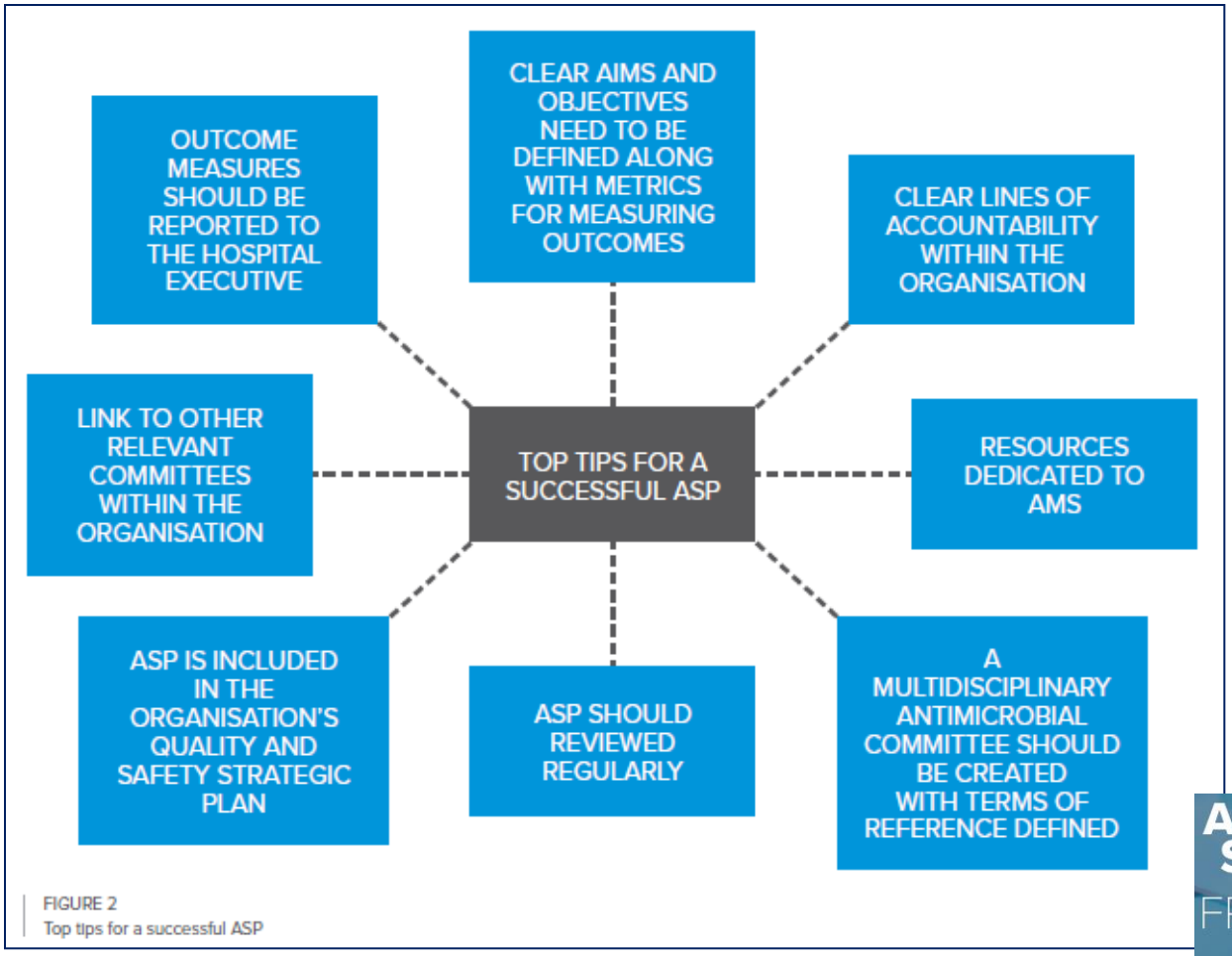


FIGURE 2
Top tips for a successful ASP

AMY için ayrılmış kaynak!

AMY ekibinde kimler olmalı?

PROPOSED MEMBERS OF ANTIMICROBIAL STEWARDSHIP GROUPS

- A senior leader who has experience of implementing change
- Infectious diseases physician
- Microbiologist
- Antimicrobial pharmacist
- Representatives from clinical specialities
- Infection control representative
- Drug and Therapeutics committee representative
- Nurse representative
- Primary care representative

Olmazsa olmaz üyeler

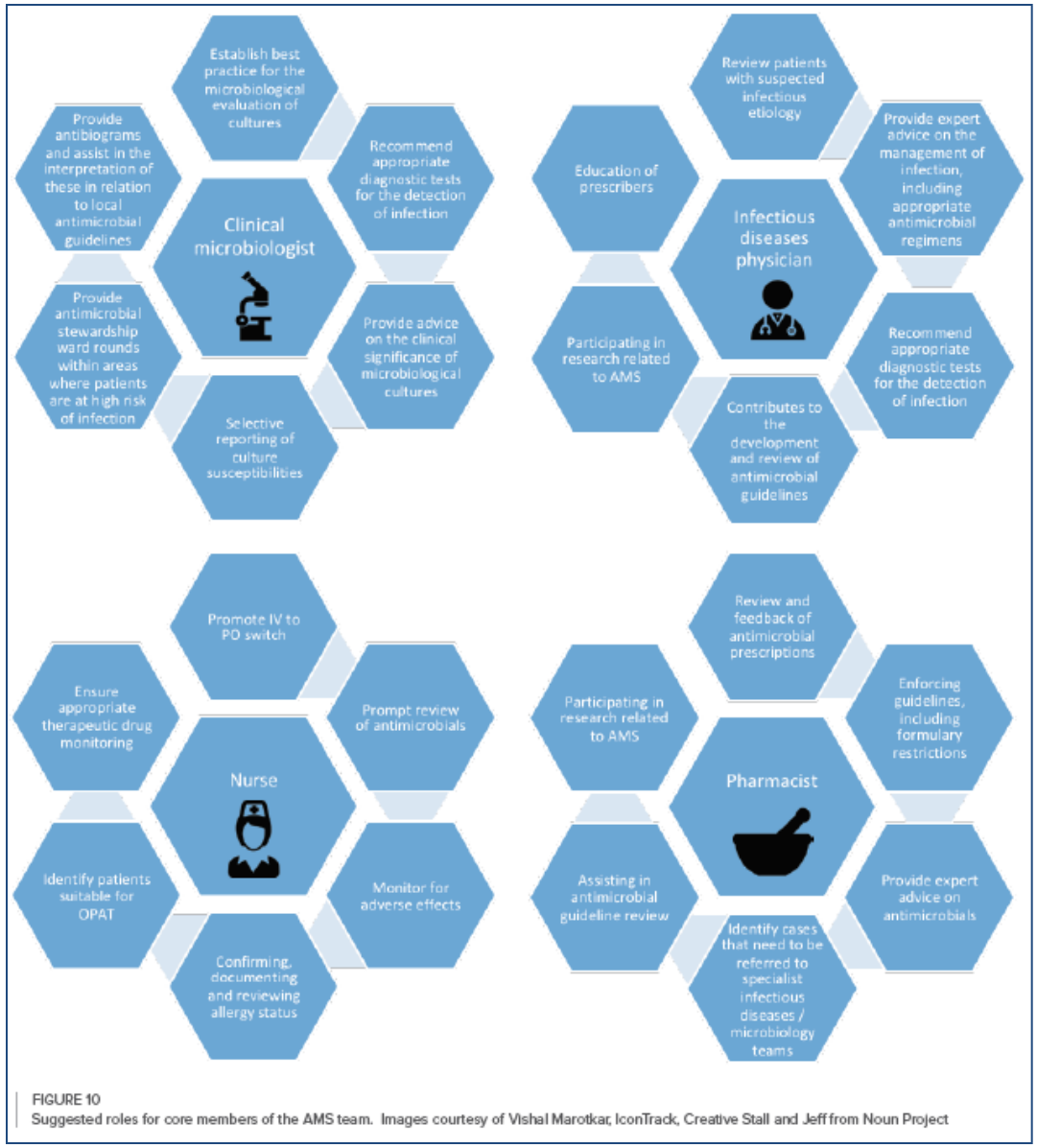


FIGURE 10
Suggested roles for core members of the AMS team. Images courtesy of Vishal Marotkar, IconTrack, Creative Stall and Jeff from Noun Project


Kültürlerin en iyi şekilde değerlendi-rilmesi
Lokal antibiyotik rehberlerine duyarlılık sonuçları ile katkıda bulunma
Tanı testleri konusunda yönlendir-me
Klinik mikrobiyoloji uzmanı
Enfeksiyon riskinin yüksek olduğu servislerde AMY vizitine katılım
Kültürdeki üremelerin klinik önemine ilişkin bilgilendirme
Duyarlılık sonuçlarının "seçerek" bildirilmesi


ANTIMICROBIAL STEWARDSHIP
FROM PRINCIPLES TO PRACTICE
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Enfeksiyon şüphesi olan hastaların değerlendi-rilmesi
Uygun antimikrobi-yal tedavinin önerilmesi
Uygun tanı testlerinin önerilmesi
Antimikro-biyal tedavi rehberlerinin oluşturulması
AMY araştırma-larına katılması
Reçete yazan hekimlerin eğitimi
Enfeksiyon hastalıkları uzmanı


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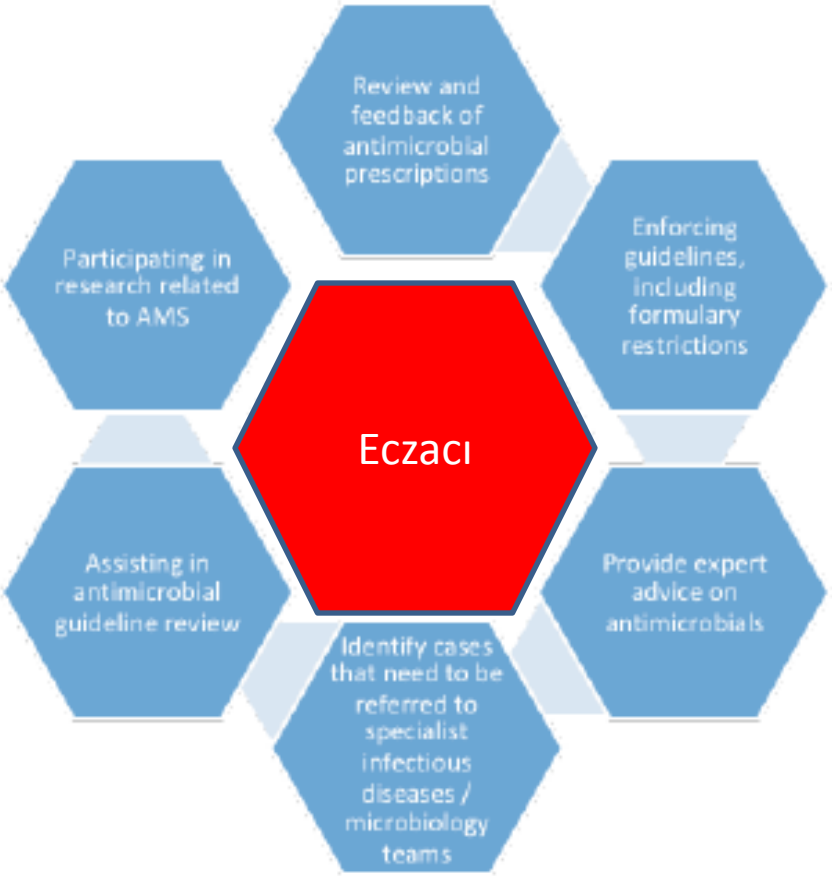
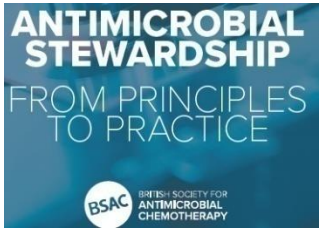
Promote IV to PO switch
Ensure appropriate therapeutic drug monitoring
Prompt review of antimicrobials
Hemşire
Identify patients suitable for OPAT
Monitor for adverse effects
Confirming, documenting and reviewing allergy status


Review and feedback of antimicrobial prescriptions
Participating in research related to AMS
Enforcing guidelines, including formulary restrictions
Eczacı
Assisting in antimicrobial guideline review
Provide expert advice on antimicrobials
Identify cases that need to be referred to specialist infectious diseases / microbiology teams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Yapılabildiğinde iyi sonuç alınacaktır!

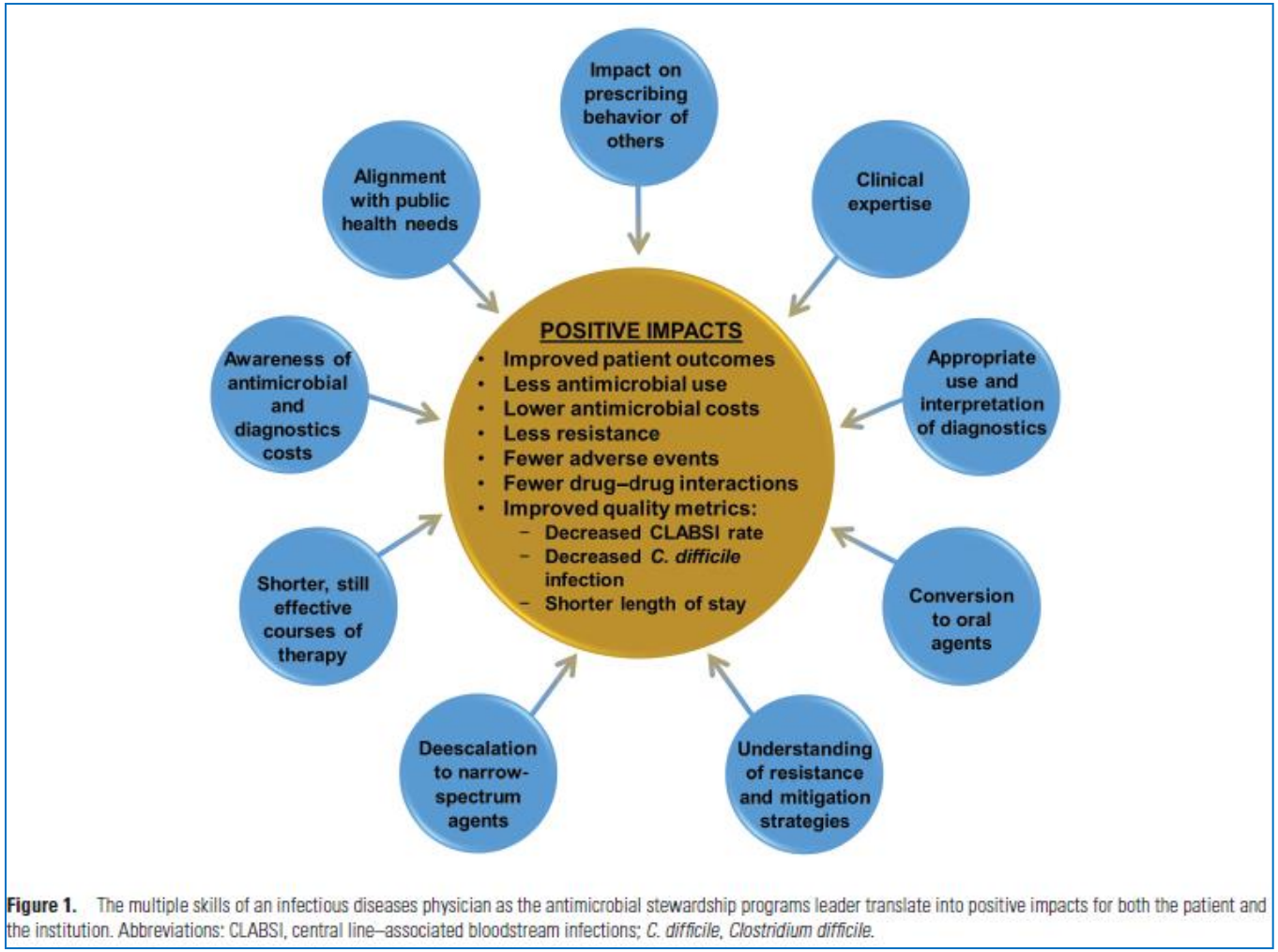


Figure 1. The multiple skills of an infectious diseases physician as the antimicrobial stewardship programs leader translate into positive impacts for both the patient and the institution. Abbreviations: CLABSI, central line–associated bloodstream infections; *C. difficile*, *Clostridium difficile*.

Nerelerden başlanabilir?

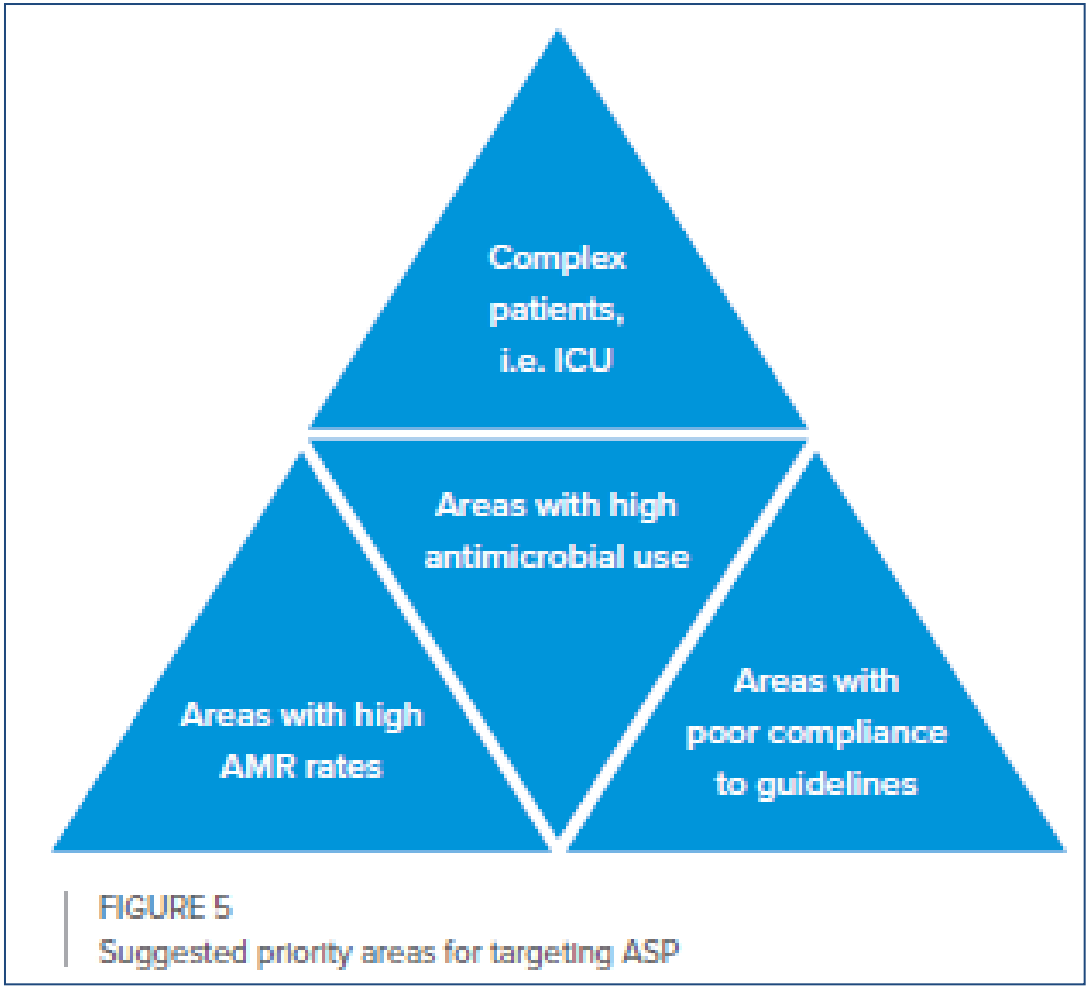
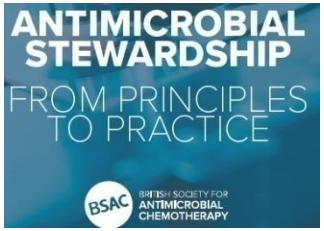


FIGURE 5
Suggested priority areas for targeting ASP

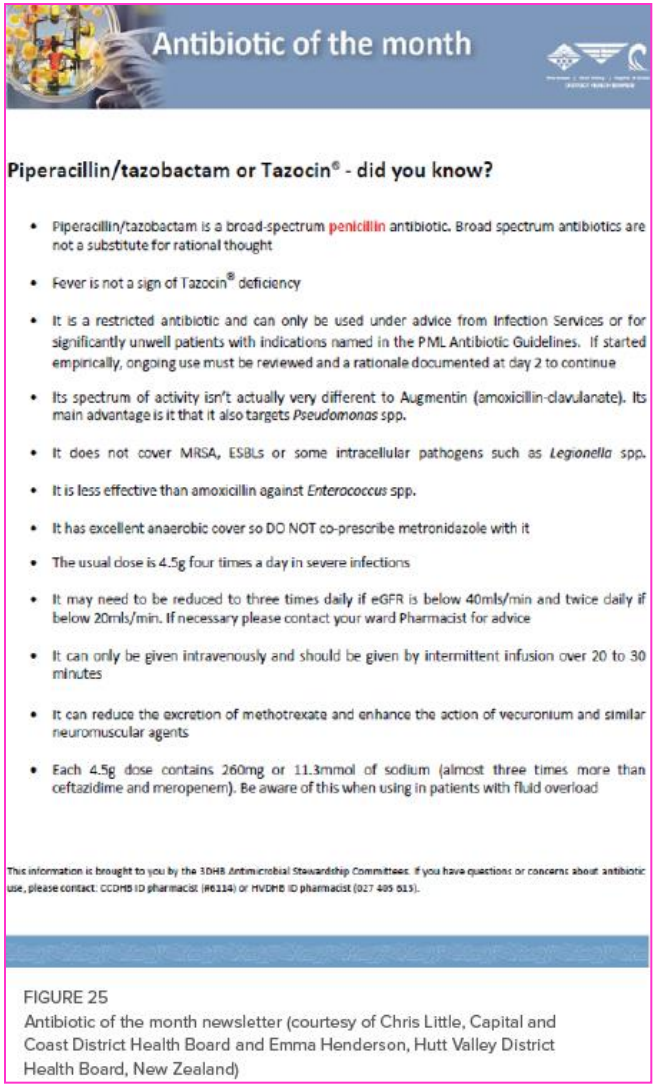


Hangi iletişim kanalları kullanılabilir?

PROPOSED COMMUNICATION ROUTES

- Posters in clinical areas / staffrooms
- Use of hospital intranet
- Organisational newsletter
- AMS newsletter
- Hospital-wide email
- Notifications via electronic prescribing programme or app
- Discussion at relevant hospital committees
- Screensaver / background on computers within the organisation
- Email to divisional leads for dissemination in clinical areas
- Social media

Ayın antibiyotiği !



Antibiotic of the month

Piperacillin/tazobactam or Tazocin® - did you know?

- Piperacillin/tazobactam is a broad-spectrum penicillin antibiotic. Broad spectrum antibiotics are not a substitute for rational thought
- Fever is not a sign of Tazocin® deficiency
- It is a restricted antibiotic and can only be used under advice from Infection Services or for significantly unwell patients with indications named in the PML Antibiotic Guidelines. If started empirically, ongoing use must be reviewed and a rationale documented at day 2 to continue
- Its spectrum of activity isn't actually very different to Augmentin (amoxicillin-clavulanate). Its main advantage is it that it also targets *Pseudomonas* spp.
- It does not cover MRSA, ESBLs or some intracellular pathogens such as *Legionella* spp.
- It is less effective than amoxicillin against *Enterococcus* spp.
- It has excellent anaerobic cover so DO NOT co-prescribe metronidazole with it
- The usual dose is 4.5g four times a day in severe infections
- It may need to be reduced to three times daily if eGFR is below 40mls/min and twice daily if below 20mls/min. If necessary please contact your ward Pharmacist for advice
- It can only be given intravenously and should be given by intermittent infusion over 20 to 30 minutes
- It can reduce the excretion of methotrexate and enhance the action of vecuronium and similar neuromuscular agents
- Each 4.5g dose contains 260mg or 11.3mmol of sodium (almost three times more than ceftazidime and meropenem). Be aware of this when using in patients with fluid overload

This information is brought to you by the 3DHB Antimicrobial Stewardship Committees. If you have questions or concerns about antibiotic use, please contact: CCDHB ID pharmacist (#6114) or HVDHB ID pharmacist (027 405 613).

FIGURE 25
Antibiotic of the month newsletter (courtesy of Chris Little, Capital and Coast District Health Board and Emma Henderson, Hutt Valley District Health Board, New Zealand)

Hangi parametreler izlenmeli?

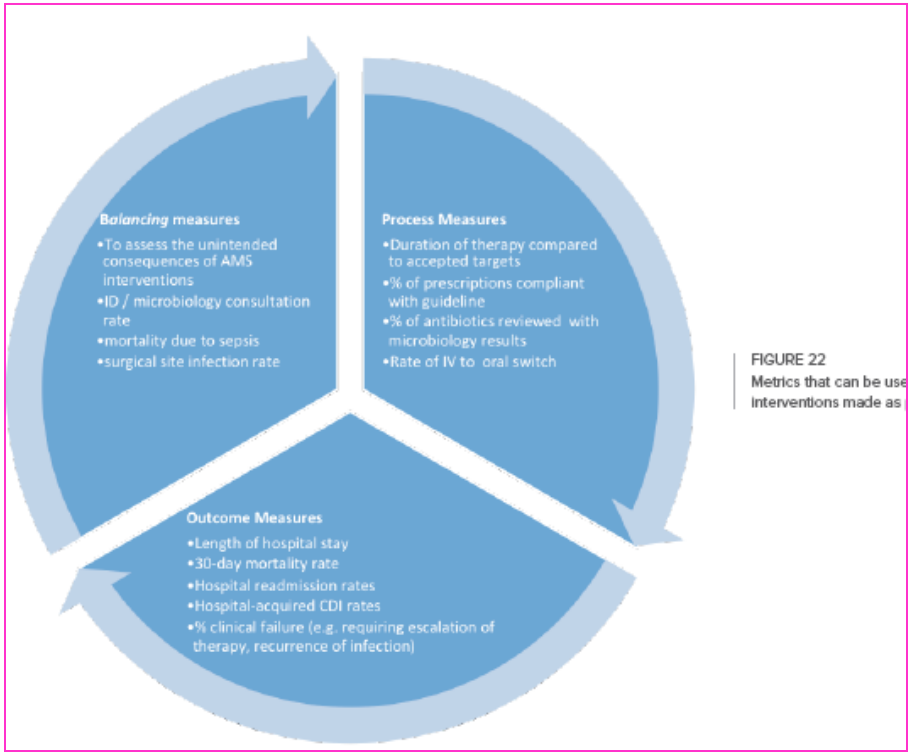


FIGURE 22
Metrics that can be use
interventions made as

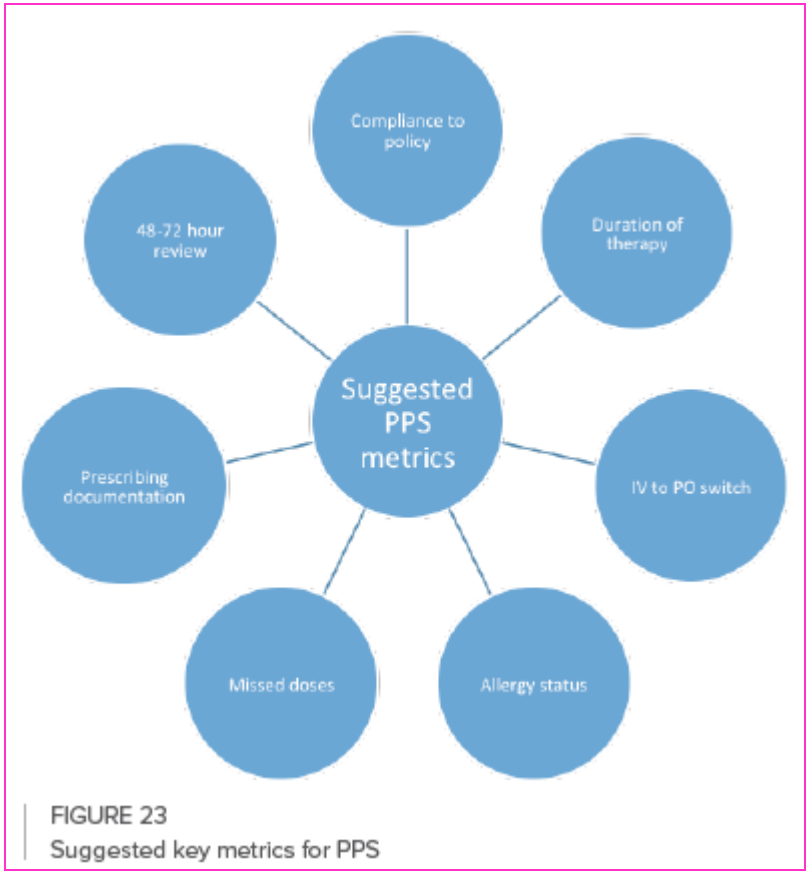
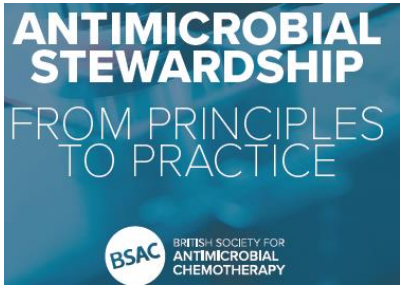


FIGURE 23
Suggested key metrics for PPS

İstenmeyen sonuçlar!

Stewardship Goals	Possible Unintended Consequences
Reducing length of stay	Increasing rates of readmission
Reducing duration of surgical prophylaxis	Increasing rates of surgical site infections
Restricting or limiting specific antimicrobials to reduce inappropriate use	Increasing use of non-restricted antimicrobials (e.g. "squeezing the balloon")
	Delaying doses of antimicrobials due to restriction processes



AMY'de enfeksiyon kontrolü vazgeçilmez!

Antimicrobial Stewardship for the Infection Control Practitioner

Jerod L. Nagel, PharmD[a], Keith S. Kaye, MD, MPH[b], Kerry L. LaPlante, PharmD[c,d,e], Jason M. Pogue, PharmD[f,*]

Antimikrobiyal yönetim;
antimikrobiyal tedavi ile enfeksiyon kontrol önlemlerinin **evliliğidir**

and *Clostridium difficile* infection, which ultimately led to poor patient outcomes.

- Antimicrobial stewardship programs are designed to promote judicious use of antimicrobials by optimizing antimicrobial selection, dose, route, and duration.
- Infection preventionists can enhance stewardship efforts through patient identification, prevention of device-related infections, and through input in the development of drug and disease state bundles.

Infect Dis Clin N Am 30 (2016) 771–784

AMY programları işe yarıyor mu?

Clinical Infectious Diseases

SUPPLEMENT ARTICLE

IDSA Infectious Diseases Society of America · hivma hiv medicine association · OXFORD

Antimicrobial Stewardship in Inpatient Settings in the Asia Pacific Region: A Systematic Review and Meta-analysis

Hitoshi Honda,[1] Norio Ohmagari,[2] Yasuharu Tokuda,[3] Caline Mattar,[4] and David K. Warren[4]

[1]Division of Infectious Diseases, Tokyo Metropolitan Tama Medical Center, [2]Disease Control and Prevention Center, National Center for Global Health and Medicine, and [3]Japan Community Healthcare Organization, Tokyo, Japan; and [4]Division of Infectious Diseases, Washington University of School of Medicine, St Louis, Missouri

Background. An antimicrobial stewardship program (ASP) is one of the core elements needed to optimize antimicrobial use. Although collaboration at the national level to address the importance of ASPs and antimicrobial resistance has occurred in the Asia Pacific region, hospital-level ASP implementation in this region has not been comprehensively evaluated.

AMY programları antimikrobiyal tüketimini azaltıyor ve klinik sonuçları iyileştiriyor gibi görünüyor ancak standardize yöntemlerle yapılmış nitelikli çalışmalara ihtiyaç var

(95% CI, −18.93% to −.99%) and −10.56% (95% CI, −19.99% to −3.03%), respectively. Trends toward decreases in the incidence of multidrug-resistant organisms and antimicrobial expenditure (range, 9.7%–58.1% reduction in cost in the intervention period/arm) were also observed.

Conclusions. ASPs in inpatient settings in the Asia Pacific region appear to be safe and effective to reduce antimicrobial consumption and improve outcomes. However, given the significant variations in assessing the efficacy of ASPs, high-quality studies using standardized surveillance methodology for antimicrobial consumption and similar metrics for outcome measurement are needed to further promote antimicrobial stewardship in this region.

Enfeksiyon hastalıkları uzmanının etkisi

REVIEW 10.1111/1469-0691.12751

The impact of infectious disease specialists on antibiotic prescribing in hospitals

C. Pulcini[1,2], E. Botelho-Nevers[3,4], O. J. Dyar[5] and S. Harbarth[6]

1) *Service de Maladies Infectieuses, CHU de Nancy,* 2) *Université de Lorraine, EA 4360 APEMAC, Nancy, France,* 3) *Service de Maladies Infectieuses, CHU de Saint-Etienne,* 4) *PRES Lyon GIMAP EA 3064, Université de Saint-Etienne, Saint-Etienne, France,* 5) *Medical Education Centre, North Devon District Hospital, Barnstaple, UK and* 6) *Infection Control Programme, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland*

EHU, antibiyotiklerin uygun kullanımına katkı sağlamakta ancak etkili olup olmamaları insani faktörlere ve organizasyonel faktörlere bağlı olarak değişkenlik göstermektedir

associated with a significant improvement in the appropriateness of antibiotic prescribing as compared with prescriptions without any IDS input, and with decreased antibiotic consumption. Variability in the antibiotic prescribing practices of IDSs, informal (curbside) consultations and the involvement of junior IDSs are among the factors that could have an impact on the efficacy of IDS recommendations and on compliance rates, and deserve further investigation. We also discuss possible drawbacks of IDSs in acute-care hospitals that are rarely reported in the published literature. Overall, IDSs are valuable to antimicrobial stewardship programmes in hospitals, but their impact depends on many human and organizational factors.

Keywords: antibiotic stewardship, antimicrobial, appropriateness, curbside consultation, infectious disease physician, interventional studies, quality, review

Article published online: 04 July 2014

Clin Microbiol Infect 2014; **20**: 963–972

Niçin AMY?

ANTIMICROBIAL STEWARDSHIP GOALS

Depending on the clinical setting AMS programs will target their goals and outcomes based on available resources and current short, mid and long-term opportunities. However, the overarching goals fall under the following categories (Figure 4):

1) improve patient care and outcomes

2) reduce collateral damage and

3) impact costs.

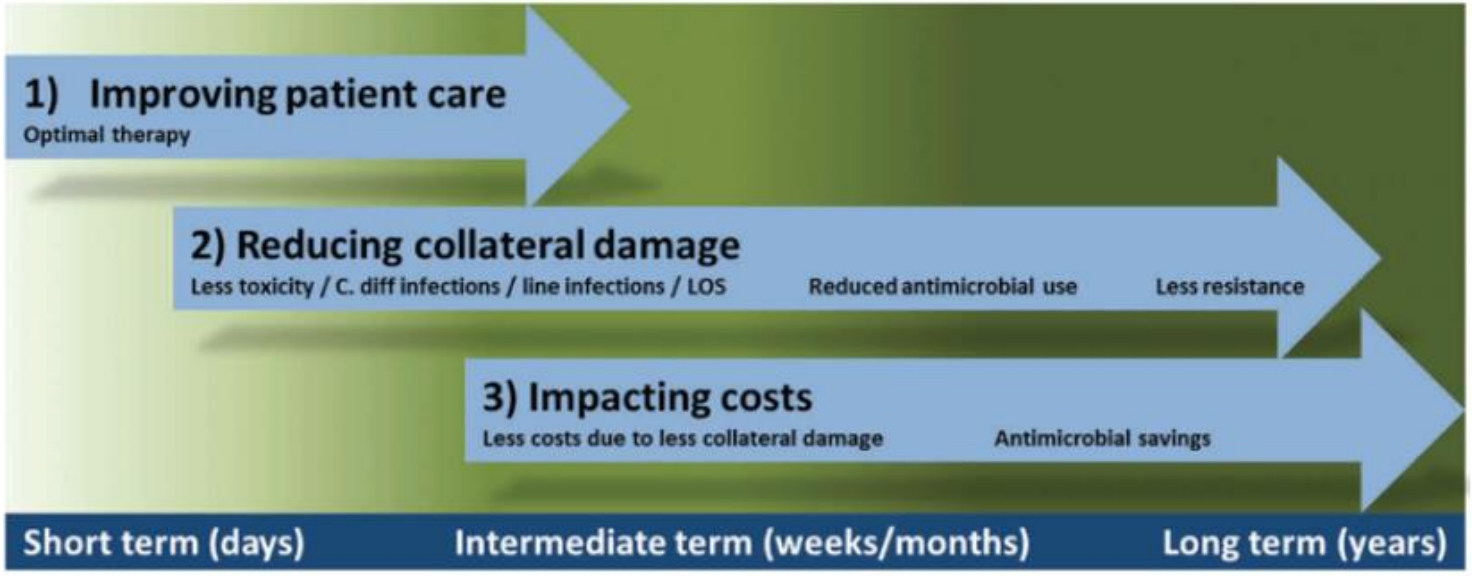


FIGURE 4
From: Jan-Willem, et al. Expert Review of Anti-infective Therapy, 14:6, 569-575

Hepimize kolay gelsin!