HOW TO USE GUIDELINES LIKE IGGI IN YOUR HOSPITAL?

(In)decent proposal

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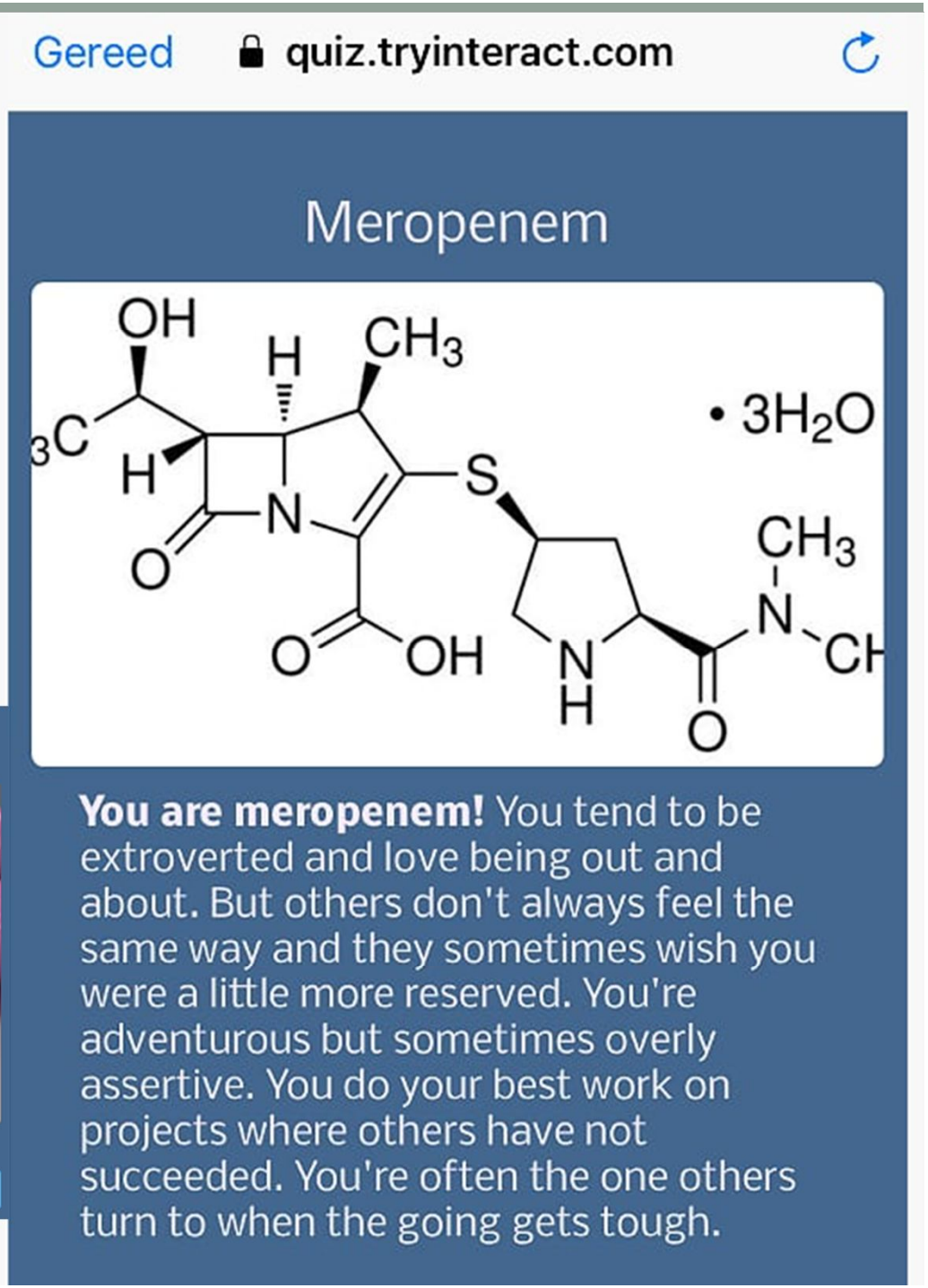
November 22th, 2018
BVIKM, Brussels

DISCLOSURE

- “I’m a meropenem”
  - **Bias:**
    - “one solution fits all”!

https://quiz.tryinteract.com/#/59e68e3a8ecd1200126656e8



CONCLUSIONS

- There is **no** absolute standard in literature that obligates a hospital to keep a **local antibiotic guide**.
- Overall **local resistance rates** are **poorly standardized**
  - performant benchmarking is feasable.
- National guidelines should include the **resistance%** that was used (or not available) and should mention **cut-off's**
- **Clinical "resistance risk assessment" in the patient** is at least as important as local, limited resistance data
- In the near future, it seams feasable to use only a central, (if very practical), **national Belgian IGGI guideline = KISS**

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"THE QUESTION"

"…may **copy most** of the recommendations, but takes into account **local epidemiology** of infectious diseases, **microbiology** and **resistance** data as well as **clinical experience** and **tradition**."

EUROPEAN JOURNAL OF EMERGENCY MEDICINE, 1997, 4, 15–18

Prophylactic, empiric and therapeutic use of antibiotics. Do we need a guide: a universal edition or a local one?

W.E. PEETERMANS

Department of Internal Medicine, U.Z., K.U. Leuven, Belgium, Herestraat 49, B-3000 Leuven, Belgium

The goal of the antibiotic policy in hospitals is a correct and restrictive use of antimicrobial agents. Guidelines on antibiotic use aim to improve the quality of care, to reduce costs and to prevent the emergence of (multi-)resistant microorganisms. Strategic options and methods to reach these objectives are published by consensus committees of scientific societies and health care organizations. The local guidelines must be based upon the universal principles of prophylactic, empiric and therapeutic use of antimicrobial agents but they also take into account the local epidemiology of infectious diseases, microbiology and resistance patterns as well as the local clinical experience. Our experience on how an antibiotic policy was developed and implemented in our large university hospital is described.

Keywords: antibiotics; drug resistance; formularies, hospital; pharmacy and therapeutics committee

GUIDELINES

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

2014

Antibiotic Prescribing and Use in Hospitals and Long-Term care

Antibiotic Use for Healthcare
Overview and Evidence to Support Stewardship +
Implementation Resources −
Core Elements of Hospital Antibiotic Stewardship Programs

CDC > Antibiotic Use > Antibiotic Use for Healthcare > Implementation Resources

Core Elements of Hospital Antibiotic Stewardship Programs

Introduction

Antibiotics have transformed the practice of medicine, making once lethal infections readily treatable

Clinical Infectious Diseases

IDSA GUIDELINE

2016

IDSA Infectious Diseases Society of

Implementing an Antibiotic Stewardship Pro
Guidelines by the Infectious Diseases Society
and the Society for Healthcare Epidemiology

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]
Yngve T. Falck-Ytter,[9] Neil O. Fishman,[10] Cindy W. Hamilton,[11] Timothy C. Jenkins,[12] Pamela A. Lipsett,[13] Preeti N. Mal
Gregory J. Moran,[16] Melinda M. Neuhauser,[17] Jason G. Newland,[18] Christopher A. Ohl,[19] Matthew H. Samore,[20] Susan

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f Allergy and
Ohio; [10]Depar

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Clinical Microbiology and Infection xxx (2018) 1–6

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journal homepage: www.clinicalmicrobiologyandinfection.com

CMI CLINICAL MICROBIOLOGY AND INFECTION ESCMID

ELSEVIER

Original article

Developing core elements and checklist items for global hospital antimicrobial stewardship programmes: a consensus approach

2018

C. Pulcini [1,2,*], F. Binda [1,2,3], A.S. Lamkang [4], A. Trett [4], E. Charani [5], D.A. Goff [6], S. Harbarth [7], S.L. Hinrichsen [8], G. Levy-Hara [9], M. Mendelson [10], D. Nathwani [11], R. Gunturu [12], S. Singh [13], A. Srinivasan [14], V. Thamlikitkul [15], K. Thursky [16], E. Vlieghe [17,18,19], H. Wertheim [20], M. Zeng [21], S. Gandra [4], R. Laxminarayan [4,22]

SWAB STICHTING WERKGROEP ANTIBIOTICABELEID

2016

SWAB Guidelines for Antimicrobial Stewardship

for Healthcare Epidemiology of America. The panel included clinicians and inve
medicine, microbiology, critical care, surgery, epidemiology, pharmacy, and adul
recommendations address the best approaches for antibiotic stewardship progran

Keywords. antibiotic stewardship; antibiotic stewardship programs; antibio

CLINICAL AND LABORATORY STANDARDS INSTITUTE®

January 2014

M39-A4

Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data; Approved Guideline—Fourth Edition

LOCAL (ONLINE) "AB-GUIDE": (STILL) NECESSARY?

- **CDC**:
  - Policies that support optimal antibiotic use:
    - Develop and implement facility specific treatment recommendations:
      - Facility-specific treatment recommendations, based on national guidelines and local susceptibilities and formulary options, can optimize antibiotic selection and duration, particularly for common indications for antibiotic use like community-acquired pneumonia, urinary tract infection, intra-abdominal infections, skin and soft tissue infections and surgical prophylaxis.
  - Infection and syndrome specific interventions:
    - Urinary tract infections (UTIs):
      - "…and ensuring that patients receive appropriate therapy based on local susceptibilities…"

UpToDate
Providing Answers to Clinical Questions

LOCAL (ONLINE) "AB-GUIDE": (STILL) NECESSARY?

- **IDSA**: III.3: Should ASPs Develop and Implement Facility-Specific Clinical Practice Guidelines for Common Infectious Diseases Syndromes to Improve Antibiotic Utilization and Patient Outcomes?
  - We suggest ASPs develop facility-specific clinical practice guidelines coupled with a dissemination and implementation strategy (weak recommendation, low-quality evidence).
    - Comment: Facility-specific clinical practice guidelines and algorithms can be an effective way to standardize prescribing practices based on local epidemiology. ASPs should develop those guidelines, when feasible, for common infectious diseases syndromes.

UpToDate
Providing Answers to Clinical Questions

LOCAL (ONLINE) “AB-GUIDE”: (STILL) NECESSARY?

- **SWAB**: 5.9: “Should a current local antibiotic guide be present in the hospital and should the local antibiotic guide correspond tot the national antibiotic guidelines?”

Local guide present	
MEDLINE	421 hits (15/04/2014)
Embase	826 hits (15/04/2014)
PubMed not MEDLINE	31 hits (15/04/2014)
Total titles screened after removing all duplicates	946
Full-text articles assessed	4
Studies included in qualitative synthesis	1

Local guide in agreement with the national guideline	
MEDLINE	116 hits (24/04/2014)
Embase	275 hits (24/04/2014)
PubMed not MEDLINE	8 hits (24/04/2014)
Total titles screened after removing all duplicates	295
Full-text articles assessed	8
Studies included in qualitative synthesis	0

Outcome	Quality	Conclusion
ICU Mortality	Low	One study reports a significant decrease of ICU mortality.

LOCAL (ONLINE) “AB-GUIDE”: (STILL) NECESSARY?

- **SWAB**: 5.9: experts (RAND-modified Delphi* procedure):
  - “Local antibiotic guide present in the hospital and having this guide corresponding to the national antibiotic guidelines were considered important structure quality indicators for appropriate antibiotic use in hospitalized adults,”
  - “empirical therapy prescribed according to the guideline has been shown to have beneficial effects on clinical outcome, adverse events and costs. Therefore, it is essential to have an antibiotic guide with recommendations for empirical therapy, regardless whether this is a local guide or a version of the national guideline.”

*The method entails a group of experts who anonymously reply to questionnaires and subsequently receive feedback in the form of a statistical representation of the "group response," after which the process repeats itself. The goal is to reduce the range of responses and arrive at something closer to expert consensus.

LOCAL (ONLINE) “AB-GUIDE”: (STILL) NECESSARY?

- **SWAB**: 5.9: experts (RAND-modified Delphi procedure):
  - “Local resistance data should guide the recommendations in the local antibiotic guides.”
    - NethMap 2016 shows that, in the Netherlands, minimal variations exist in local resistance rates, which are not sufficient to explain the differences between policies in the antimicrobial guides.
      - Local resistance rates are only by exception a reason to deviate from the national guidelines.
      - Deviations from the national guidelines should be explained explicitly

Recommendation	Strength	Quality of evidence
The Guideline committee recommends to have a local antibiotic guide present in the hospital.	Strong recommendation	Low
The Guideline committee also recommends that the local antibiotic guide corresponds to the national antibiotic guidelines and that deviations from the national guidelines should be explained explicitly.	Strong recommendation	*

* no evidence obtained from the literature

LOCAL (ONLINE) "AB-GUIDE": (STILL) NECESSARY?

"based on international/national EB-guidelines and local susceptibility (WHEN POSSIBLE)"

Checklist item 5.1:
Is a multidisciplinary antimicrobial stewardship team available at your hospital (e.g., greater than one trained staff member supporting clinical decisions to ensure appropriate antimicrobial use)?
Checklist item 5.2:
Does your hospital support the antimicrobial stewardship activities/ strategy with adequate information technology services?
Accompanying comment: *The level of requirement needs to be defined at local/regional/national level. This could include, for example, measurement of antimicrobial use*
Checklist item 5.3:
Does your hospital have an antimicrobial formulary (i.e. a list of antimicrobials that have been approved for use in a hospital, specifying whether the drugs are unrestricted, restricted (approval of an antimicrobial stewardship team member is required) or permitted for specific conditions)?
Accompanying comment: *This might be based on national recommendations, or the WHO Essential Medicines List.*
Checklist item 5.4:
Does your hospital have available and up-to-date recommendations for infection management (diagnosis, prevention and treatment), based on international/national evidence-based guidelines and local susceptibility (when possible), to assist with antimicrobial selection (indication, agent, dose, route, duration) for common clinical conditions?
Checklist item 5.5:

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LOCAL (ONLINE) "AB-GUIDE": (STILL) NECESSARY?

- BAPCOC: yearly activity report
  - Not included anymore?
- NIAZ/Qmentum: Infection prevention and management (2018-01-31)
  - Not (yet) included?
- JCI Hospitals (6th edition, 2017)
  - AB-Stewardship (based scientific evidence)

MMU.1.1	New standard—not previously in 5th edition	• Introduces a new standard that identifies the requirement for organizations to develop and implement a program for antibiotic stewardship
		• MEs 1 through 5 include requirements for
		  • a program that involves all staff and includes patients and families
		  • a program that is based on scientific evidence
		  • proper use of prophylactic antibiotics
		  • oversight of the program
		  • monitoring the effectiveness of the program
			✓	

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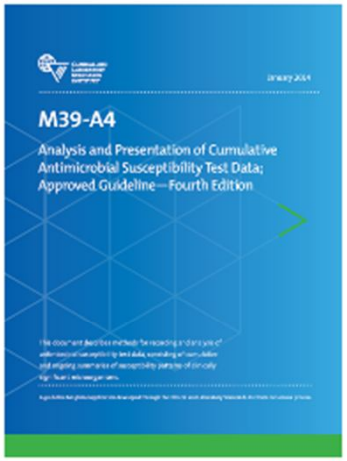
LOCAL RESISTANCE: CLSI M39-A4



View Sample Pages

M39

Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data, 4th Edition

H.-Hartziekenhuis Lier

CAT
Critically Appraised Topic

Het optimaliseren van het (selectief) rapporteren van antibiotica.

Auteur: Van Aelst Sophie
Supervisor: Laffut Wim
Datum: 24/04/2014

CLINICAL BOTTOM LINE

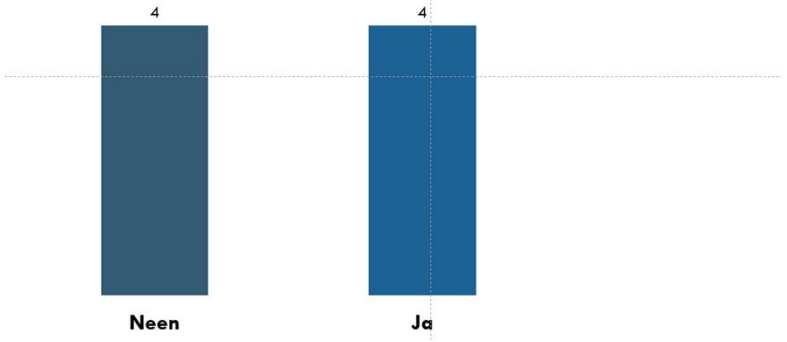
Deze CAT gaat dieper in op één van de aspecten van *Antimicrobial Stewardship*, namelijk "het optimaliseren van het rapporteren van antimicrobiële middelen" om zo het adequaat gebruik van antibiotica te stimuleren. De microbioloog kan door een goed opgesteld antibioticarapport de artsen ondersteunen, zonder ze totaal hun

https://www.uzleuven.be/nl/laboratoriumgeneeskunde/overzicht-cats-microbiologie

SPOORT U ROUTINEMATIG ESBL-PRODUKTIE OP BIJ VERDACHTE ENTEROBACTERIACEAE?

Van Herendael B., Bilulu vzw, 2018

LOCAL RESISTANCE?



- Multiple **questions**!
  - **Statistics/queries**: who does what?
    - Who does the same (within network, region,…)? ☺
    - Resistance (R+I) and/or epidemiology (>30 isolates?)
      - Fi. ESBL
    - Outpatient, inpatient, day care, specimen type, duplicates?
    - LIS? (GLIMS> Cortex> Molis> Java-LIS,…)
  - **Benchmark?**
    - No Nethmap (2018) www.rivm.nl/bibliotheek/rapporten/2018-0046.pdf
    - What was “% resistance” in the guidelines, experts,…?
  - What are the **cut-off’s** that trigger “action”?
    - Who dares adapting AB-profylaxis (surgery)?
      - (No) deviation (inter)national guidelines without “evidence”
    - Which % resistance “scales up” empiric therapy?

LOCAL RESISTANCE?

- Some **answers**:
  - CLSI M39-A4
  - WIV/Sciensano surveillance MDRO's
    - http://www.nsih.be/surv_mrgn/download_nl.asp
  - Glims Users Microbiology (GUM)
    - An Boel (OLV-Aalst) and Patricia Vandecandelaere (Ieperman, Ieper)
      - Standardisation (fi. doubles), implementation HD4DP
  - Benchmark?
    - No Nethmap (but participation OK?)
      - annelot.schoffelen@rivm.nl (T: +31 (0)30 274 2445)
      - ISIS-AR (https://www.isis-web.nl/)
  - Future: HealthData (BE)
    - HD4DP (https://healthdata.wiv-isp.be/nl/projecten)
      - "Health Data for Data Providers" (LOINC, SNOMED, ReTaM)
      - Sentinel labs, Nosocomial sepsis, (EARSS)

SURVEILLANCE VAN MULTIRESISTENTE BACTERIËN IN BELGISCHE ZIEKENHUIZEN
Enterobacter cloacae, Escherichia coli, Klebsiella pneumoniae,
Acinetobacter baumannii en Pseudomonas aeruginosa
SURVEILLANCEFORMULIER

www.interactieopleidingen.nl 16/05/18

INITIATIVE: UNITY OF LANGUAGE

Rijksinstituut voor Volksgezondheid en Milieu
Ministerie van Volksgezondheid, Welzijn en Sport

RIVM *De zorg voor morgen* begint vandaag

Home | Documenten en publicaties | Onderwerpen | Over RIVM | English | Zoeken

Home › Onderwerpen › A › Antibioticaresistentie › Eenheid van Taal in antibioticaresistentie (ABR)

In dit onderwerp

Antibioticaresistentie
- + Antibioticaresistentie algemeen
- + Actueel
- + Antibioticaresistentie in de zorg
- + Onderzoek naar resistente bacteriën in verpleeghuizen
- + Onderzoek naar antibioticaresistente bacteriën bij dierenartsen en dierenartsassistenten
- › Antibioticaresistentie in dieren, voedsel en milieu
- › Overzicht surveillance onderzoeken
- › Internationale samenwerking antibioticaresistentie
- ⌄ Eenheid van Taal in antibioticaresistentie (ABR)
  - › Eerste labs aangesloten op Eenheid van Taal in antibioticaresistentie
  - › Vijf labs operationeel en acht nieuwe labs gestart
- › Over ons (programmateam antibioticaresistentie)

Eenheid van Taal in antibioticaresistentie (ABR)

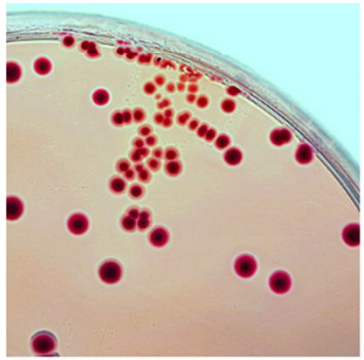
Eenheid van Taal in ABR is een gezamenlijk project van Nictiz, NVMM en RIVM. Het doel van dit project is om de uitwisseling van informatie tussen medisch microbiologische laboratoria (MML's) te verbeteren en te versnellen, zowel onderling als ook met de landelijke monitoring- en surveillancesystemen van het RIVM. Om dit te realiseren is een gemeenschappelijke taal ontwikkeld in de vorm van een gestandaardiseerde codelijst. Daarnaast zijn samenwerkingsafspraken nodig en aanpassingen aan systemen. In een pilot wordt hiervoor een blauwdruk ontwikkeld.

Waarom Eenheid van Taal in antibioticaresistentie?

Gegevens zijn op dit moment versnipperd beschikbaar en nog onvoldoende gestandaardiseerd om direct te kunnen gebruiken voor vergelijkingen en als referentiepunt. Nu is nog veel handmatig werk nodig voor het maken van overzichten en rapportages in het landelijk systyeem ISIS-AR ter ondersteuning van surveillance en monitoring van ABR. Dit kost tijd. Hierdoor wordt optimalisering van beleid, maar ook de aanlevering van informatie voor meer gerichte bestrijding van bijzonder resistente micro-organismen (BRMO's) bemoeilijkt en vertraagd.

Het effectief bestrijden van infecties als gevolg van resistente micro-organismen vergt tijdig en adequaat inzicht in wie er waar, wanneer en waarom geïnfecteerd raakt. Ook is inzicht nodig in hoe resistente bacteriën en resistentiegenen zich verspreiden.

Hoewel we op dit moment in Nederland al veel gegevens over BRMO, zorginfecties en antibioticagebruik verzamelen, is verdere verbetering van de informatievoorziening voor surveillance en monitoring van antibioticaresistentie (ABR) noodzakelijk.



Zie ook
- › Vraag en antwoord Eenheid van Taal - ABR
- › Eerste labs aangesloten op Eenheid van Taal in antibioticaresistentie
- › Vijf labs operationeel en acht nieuwe labs gestart

CONCLUSIONS

- There is **no** absolute standard in literature that obligates a hospital to keep a **local antibiotic guide**.
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BMJ Open

Guideline recommendations and antimicrobial resistance: the need for a change

Christelle Elias,[1] Lorenzo Moja,[1] Dominik Mertz.[2] A
Nicola Magrini[1]

To cite: Elias C, Moja L, Mertz D, *et al*. Guideline recommendations and antimicrobial resistance: the need for a change. *BMJ Open* 2017;**7**:e016264. doi:10.1136/bmjopen-2017-016264

► Prepublication
additional
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Received 3 February 2017
Revised 13 April 2017
Accepted 21 April 2017

ABSTRACT

Objectives Antimicrobial
global burden for
is an impor
sele
on the
their effects on
ve of this study was to
ntibiotic prescribing guidelines
stance patterns when making
ions for five highly prevalent infectious
ines.

Design We used Medline searches complemented with extensive use of Web engine to identify guidelines on empirical treatment of community-acquired pneumonia, urinary tract infections, acute otitis media, rhinosinusitis and pharyngitis. We collected data on microbiology and resistance patterns and identified discrete pattern categories. We assessed the extent to which

Conclusion There is consistent evidence that guidelines on empirical antibiotic use did not routinely consider resistance in their recommendations. Decision-makers should analyse and report the extent of local resistance patterns to allow better decision-

rength and limitations of this study

- As part of the WHO Global Action Plan on Antimicrobial Resistance, this study is an innovative comparison of guidelines on the appropriate use of antibiotics based on resistance patterns across countries.
- Research was limited only to an electronic screening so printed versions of clinical practice guidelines may have been missed.
- Recommendations were arbitrarily hierarchised according to the influence of resistance data collected.
- Further research on the quality and relevance of specific recommendations based on resistance is needed identifying further obstacles to progress antimicrobial resistance and bringing them to light.

LOCAL RESISTANCE? CUT-OFF?

- Some **answers**:
  - Wiersinga et al. Management of community-acquired pneumonia in adults: 2016 guideline update from the Dutch Working Party on Antibiotic Policy (SWAB) and Dutch Association of Chest Physicians (NVALT). The Netherlands Journal of Medicine, 2018
    - S. pneumoniae: doxy 9% R

Risk category I (mild CAP): CURB-65: 0-1, PSI: 1-2, non-hospitalised

For this group, initial therapy with a narrow spectrum beta-lactam antibiotic (1st choice) or doxycycline (2nd choice) is recommended. This is in accordance with the previous guidelines[1] and the 2011 guidelines for patients treated by GPs.[33] Doxycycline is not a first choice for this group in view of the 9% resistance of *S. pneumoniae* against doxycycline. The choice of a drug active against the most frequently occurring causative agent (*S. pneumoniae*) is essential in this case. Oral penicillin is not considered a first choice in view of the suboptimal gastrointestinal resorption. As a result of the increasing resistance of

LOCAL RESISTANCE? CUT-OFF?

- Some **answers**:
  - Guideline mentions (very occacionally) specific resistentance-ratio!
    - Guidelines for the Selection of Anti-infective Agents for Complicated Intra-abdominal Infections. IDSA, CID, 2010
      - **CA-infection**: Quinolone-resistant *E. coli* have become common in some communities, and quinolones should not be used unless hospital surveys indicate >90% susceptibility of *E. coli* to quinolones (A-II).

Table 3. Recommendations for Empiric Antimicrobial Therapy for Health Care–Associated Complicated Intra-abdominal Infection

Organisms seen in health care–associated infection at the local institution	Regimen				
	Carbapenem[a]	Piperacillin-tazobactam	Ceftazidime or cefepime, each with metronidazole	Aminoglycoside	Vancomycin
<20% Resistant *Pseudomonas aeruginosa*, ESBL-producing Enterobacteriaceae, *Acinetobacter*, or other MDR GNB	Recommended	Recommended	Recommended	Not recommended	Not recommended
ESBL-producing Enterobacteriaceae	Recommended	Recommended	Not recommended	Recommended	Not recommended
P. aeruginosa >20% resistant to ceftazidime	Recommended	Recommended	Not recommended	Recommended	Not recommended
MRSA	Not recommended	Not recommended	Not recommended	Not recommended	Recommended

NOTE. ESBL, extended-spectrum β-lactamase; GNB, gram-negative bacilli; MDR, multidrug resistant; MRSA, methicillin-resistant *Staphylococcus aureus*. "Recommended" indicates that the listed agent or class is recommended for empiric use, before culture and susceptibility data are available, at institutions that encounter these isolates from other health care–associated infections. These may be unit- or hospital-specific.

[a] Imipenem-cilastatin, meropenem, or doripenem

LOCAL RESISTANCE? CUT-OFF

- Some **answers**:
  - Ullmann et al. Diagnosis and management of **Aspergillus** diseases: executive summary of the 2017 ESCMID-ECMM-ERS guideline. Clin Microbiol Infect, 2018 May;24

> [11]. In settings with environmental azole resistance, no change to the primary regimen for IA is recommended when resistance rates are <10% (**AIII**). If azole resistance rates are >10%, first-line therapy with voriconazole plus echinocandin (**BIII**) or liposomal amphotericin B (**BIII**) is recommended.

  - Rijnders B. Optimal Use of Antibiotic Therapy. Ede, 2018
    - Adaptation of local policy: 3 consecutive years vorico R >10%
      - Take into account **mortality!!!** 29-60% cfr. population

www.interactieopleidingen.nl 16/05/18

LOCAL RESISTANCE? CUT-OFF

Management of Ventilator-Associated Pneumonia
Guidelines

Mark L. Metersky, MD[a,*], Andre C. Kalil, MD, MPH[b]

Clin Chest Med 39 (2018) 797–808

KEYWORDS

- Guideline • Hospital-acquired pneumonia • Ventilator-associated pneumonia
- Nosocomial pneumonia

KEY POINTS

- Although the guidelines for the diagnosis and treatment of hospital-acquired pneumonia (HAP) and ventilator associated pneumonia (VAP) recently released by the Infe… America with the American Thoracic Society, and the European Resp… noteworthy differences, they are more similar than different.
- Appropriate initial empiric antibiotic treatment of HAP and VAP is imp… outcomes. Both excessive antibiotic treatment and ineffective initial tr… to cause patient harm.
- There is considerable patient-level and hospital-level variation in the pr… ogens causing HAP and VAP. Empiric antibiotic regimens should be b… data and knowledge of patient-level factors that predict antibiotic-resis…
- Most patients with HAP and VAP can be treated with a 7-day course o…
- Procalcitonin measurement is not useful for determining if a patient w… receive antibiotics, but is useful in decreasing the length of antibiotic t… not routinely use short-course therapy.

Guidelines accepted a somewhat arbitrary target of creating initial empiric antibiotic regimens that would provide appropriate therapy for 95% of patients.
Even with triple antibiotics for all patients, it might not be possible to achieve 100% appropriate initial empiric therapy;
there would be diminishing returns and increased antibiotic usage associated with attempting to achieve appropriate coverage rates greater than 95%.

CONCLUSIONS

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COMBINATION RISK ASSESMENT AND RESISTANCE

Table 2. Risk Factors for Multidrug-Resistant Pathogens

Risk factors for MDR VAP
Prior intravenous antibiotic use within 90 d
Septic shock at time of VAP
ARDS preceding VAP
Five or more days of hospitalization prior to the occurrence of VAP
Acute renal replacement therapy prior to VAP onset
Risk factors for MDR HAP
Prior intravenous antibiotic use within 90 d
Risk factors for MRSA VAP/HA
Prior intravenous antibiotic u
Risk factors for MDR *Pseudo*
Prior intravenous antibiotic u

Abbreviations: ARDS, acute res
pneumonia; MDR, multidrug resist
VAP, ventilator-associated pneumo

Clinical Infectious Diseases

IDSA GUIDELINE

Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases Society of America and the American Thoracic Society

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COMBINATION RISK ASSESMENT AND RESISTANCE

- Coverage of MRSA
  - hospitalisation in unit with 10-20% resistance
- Coverage of Pseudomonas (double therapy)
  - being treated in ICUs where ≤10% of gram-negative isolates are resistant to the agent being considered for monotherapy

1. For patients being treated empirically for HAP, we recommend prescribing an antibiotic with activity against *S. aureus* *(strong recommendation, very low-quality evidence).* (See below for recommendations regarding empiric coverage of MRSA vs MSSA.)

   i. For patients with HAP who are being treated empirically and have either a risk factor for MRSA infection (ie, prior intravenous antibiotic use within 90 days, hospitalization in a unit where >20% of *S. aureus* isolates are methicillin resistant, or the prevalence of MRSA is not known, or who are at high risk for mortality, we suggest prescribing an

5. We suggest prescribing one antibiotic active against *P. aeruginosa* for the empiric treatment of suspected VAP in patients without risk factors for antimicrobial resistance who are being treated in ICUs where ≤10% of gram-negative isolates are resistant to the agent being considered for monotherapy *(weak recommendation, low-quality evidence).*

“CONCLUSION”?

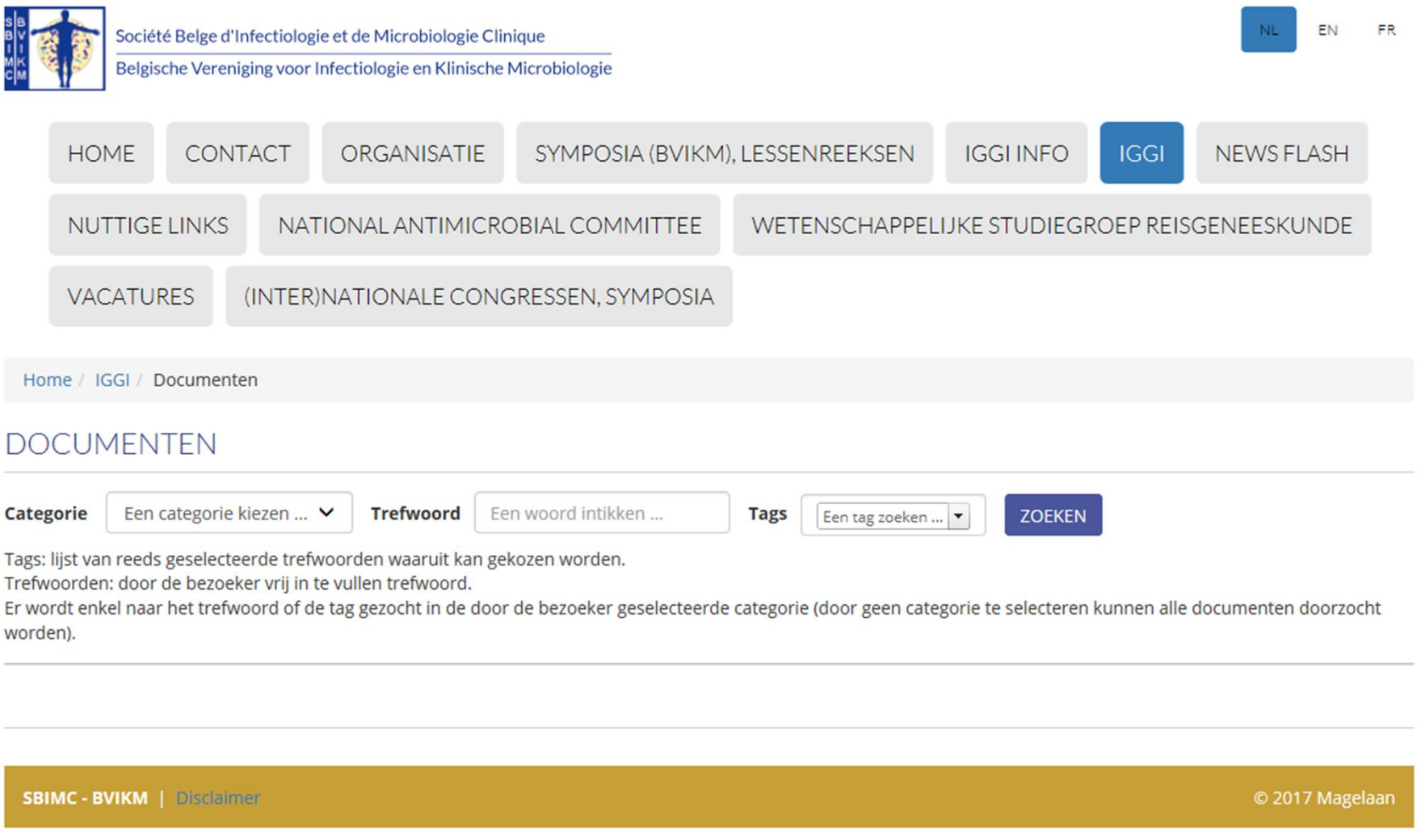
- Treshold:
  - 5%, 7,5%, **10%**, 15%, 20%?
- Repetitively exceeded?
- Risk assessment and local resistance: combination
  - Daily routine
- Mortality matters (a lot)!
  - Don’t exceed 10% resistance

- **Question:**
  - Manage this in a uniform and central way?
    - In IGGI?

CONCLUSIONS

- There is **no** absolute standard in literature that obligates a hospital to keep a **local antibiotic guide**.
- Overall **local resistance rates** are **poorly standardized**
  - performant benchmarking is feasable.
- National guidelines should include the **resistance%** that was used (or not available) and should mention **cut-off's**
- **Clinical "resistance risk assessment" in the patient** is at least as important as local, limited resistance data
- In the near future, it seams feasable to use only a central, (if very practical), **national Belgian IGGI guideline?**

IGGI: HOW DO WE PROCEED?



http://www.bvikm.org/documenten

ASKING COLLEAGUES

BILULU

BILULU vzw

vzw Microbiology Study Group

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News

21/02/2018: Update BILULU activities: paper on urine consensus added

10/12/2017: Added: Stool consensus document (V1), open for comments

10/12/2017: BILULU welcomes 2 new members, Peggy Bruynseels, MD and Bruno Van Herendael, MD

3/11/2017: Added: Presentations Symposium 2017 "Stool & the gang (van zaken)"

25/8/2017: Invitation and final program of the BILULU symposium "Stool & the gang (van zaken)"

28/4/2017: Update on BILULU scientific publucations ("Activities" => "Science")

28/4/2017: first announcement of the BILULU symposium on their stool consensus procedure, October 19th 2017, Brussels

7/3/2017: BILULU presents its Urine Consensus Document on a BioWorkshop (Biomérieux)

7/7/2016: Added: Presentations Symposium 2016: "Urinecultuur: een consensus?" in collaboration with BVLT-ABTL

13/01/2016: Symposium: "Urinecultuur: een consensus?" in collaboration with BVLT-ABTL

1/1/2016: Consensus Urine update (Consensus V8) added (please send your comments to Bilulu vzw)

1/2/2015: Symposium "To n or not to n"; March 19th 2015, Brussels

23/10/2014: Project Clostridium difficile: Cost Calculation Algorithm (interactive, excel file) added

About Bilulu

Founded over a decade ago, BILULU has evolved and expanded from five to seven microbiologists. We value collaboration highly, and this shows in a number of our initiatives. Molecular biologists and head lab technicians, for instance, meet on a regular basis, so knowledge is shared at all levels of our laboratories. We also try to enthuse our assistant clinical biologists and convince them of the importance of knowledge sharing.

This became clear once more in 2015, when we carried out a cultural value assessment of BILULU. Along with the priceless value of our knowledge network, we found out that producing and implementing consensus procedures should be the core business of our organization. This in turn led to the finalization of our urine consensus procedure. Next we will turn our attention to stool consensus, and there are doubtless many more to follow.

As you can see, the tickling goes on...

Wim Laffut
BILULU President

Members

Reinoud Cartuyvels, MD (labo Jessa ziekenhuis Hasselt)

Guy Coppens, MD (labo ZOL Genk)

Hans De Beenhouwer, MD (labo OLV Aalst)

Johan Frans, MD (labo Imelda Bonheiden)

Wim Laffut (labo HHZH Lier)

Patricia Vandecandelaere (labo JYZ Ieper)

Annemie Van den Abeele, MD (labo AZSL Gent)

Peggy Bruynseels, MD (labo ZNA Antwerpen)

Bruno Van Herendael, MD (labo GZA Antwerpen)

WHY (STILL) LOCAL?

What some colleagues say

- **Resume**
  - IGGI very extensive (reference work): a synopsis is still desirable
    - eg. doctor in training on call
- **Clear choices (simple!)**
  - 1 Preference and 1-2 alternatives in (IgE-mediated) allergy
    - Avoiding dosing errors
    - Duration of therapy (shortest treatment?)
- **User friendly**
  - IGGI slow-loading“pages” (document management?); “Table layout”
  - (Search function) still complex (not yet used to “tags”)
- **Clinicians get involved**
  - Hospital (nephro, neuro, ortho, vascular, cardio,…)
  - GP’s! (paper guide if not yet app/online)

- **Based on local resistance/epidemiology**
  - Method remains unspecified; often for urinary pathogens
  - Especially CPE prevalence mentioned (empirical choice)
  - Particulary important when adapting from USA (Up-To-Date), broader European guidelines; less for national ones

Antibiotic Study Guide & Cheat Sheet

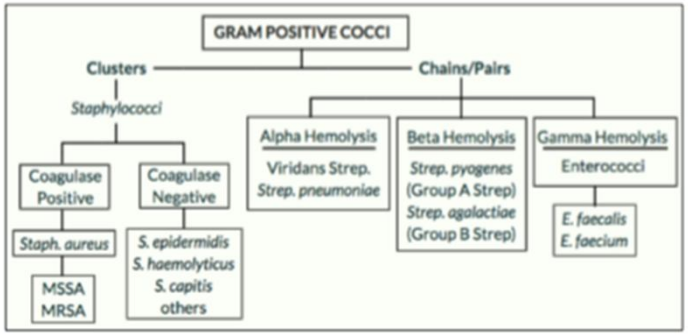
IDSTEWARDSHIP TRAINING

When You See…	Consider Using…
GRAM POSITIVES	
MSSA	**Oral**: cephalexin; **IV**: Oxacillin, nafcillin, cefazolin
MRSA	**Oral**: Bactrim, doxycycline, clindamycin, linezolid, tedizolid; **IV**: vancomycin, daptomycin, telavancin, dalbavancin, oritavancin, ceftaroline, tigecycline
Enterococci	Ampicillin, then vancomycin, then linezolid (VRE), daptomycin (VRE), or tigecycline (VRE)
Strep. pyogenes or *Strep. agalactiae*	Penicillin, clindamycin
Strep. pneumoniae or Viridans group Strep	Ceftriaxone, levofloxacin, amoxicillin-clavulanic acid (beware penicillin & macrolide resistance)
GRAM NEGATIVES	
Pseudomonas aeruginosa	**Oral**: ciprofloxacin, levofloxacin; **IV**: pip/taz, ceftazidime, ceftazidime-avibactam, cefepime, ceftolozane-tazobactam, imipenem-cilastatin, meropenem, meropenem-vaborbactam, aztreonam, aminoglycosides, polymyxins
E. coli	**Oral**: cephalexin, amoxicillin-clavulanic acid, Bactrim, nitrofurantoin, fosfomycin, ciprofloxacin, levofloxacin; **IV**: ceftriaxone, ampicillin-sulbactam
ESBL+	ceftazidime-avibactam, polymyxins, aminoglycosides, fosfomycin
Carbapenem resistant	ESBL+ drug list minus carbapenems
MISCELLANEOUS	
Anaerobes	**Oral:** Metronidazole, clindamycin, amoxicillin-clavulanic acid, moxifloxacin; **IV**: ampicillin-sulbactam, piperacillin-tazobactam, cefoxitin, cefotetan, ertapenem, tigecycline
Clostridium difficile	Oral vancomycin or fidaxomicin → Metronidazole no longer preferred
Atypicals	Macrolides, fluoroquinolones, tetracyclines
Candida albicans	Fluconazole
Candida krusei	Micafungin, anidulafungin, or caspofungin
Aspergillus	Voriconazole
CMV	**PO**: valganciclovir; **IV**: ganciclovir
HSV	**PO**: acyclovir, valacyclovir; **IV**: acyclovir
Cryptosporidium	Nitazoxanide

Resume: https://training.idstewardship.com

See This…	Think NOT for…
Daptomycin	Pneumonia
Tigecycline	Bacteremia or Pseudomonas
Linezolid	MRSA bacteremia
Cefepime	Anaerobes, Enterococci
Ertapenem	Acinetobacter, Pseudomonas, Enterococci - "APE"
Aztreonam	Gram positives
Aminoglycoside monotherapy	Non-UTI indication
Rifampin	Monotherapy
Micafungin	UTI or meningitis
Fluconazole	Candida krusei

With this…	Beware…
Beta-lactams	GI upset, seizures
trim	Hyper-K+, allergy, myelosuppression
Fluoroquinolones	QT prolong, CNS effects, tendon rupture, peripheral neuropathy, binding cations
Aminoglycosides	Ototoxicity, nephrotoxicity
Macrolides	QT prolong
Tetracyclines	Phototox., esophagitis
Tigecycline	Nausea/ vomiting
Daptomycin	CK elevation
Linezolid	Thrombocytopenia, peripheral neuropathy, optic neuritis
Vancomycin	Nephrotoxicity
Rifampin	Hepatotoxicity, DDIs
Azoles	Hepatotoxicity, DDIs
Amphotericin B	Hypo-K, Hypo-Mg, infusion rxn, nephrotox



SPACE Bugs
S- *Serratia*
P- *Pseudomonas*
A- *Acinetobacter*
C- *Citrobacter*
E- *Enterobacter*

Non-Fermenting GNRs
Burkholderia
Acinetobacter
Pseudomonas
Alcaligenes
Stenotrophamonas

Zosyn covers anaerobes and enterococci, cefepime does not

MecA = methicillin resistance
VanA, VanB = vancomycin resistance
KPC = carbapenem resistance

[Last updated October 2018]

For More Cheat Sheets Visit: www.LearnAntibiotics.com

Paul E. Sax, MD

Contributing Editor
NEJM JOURNAL WATCH
INFECTIOUS DISEASES

Biography | Disclosures | Summaries

Learn more about *HIV and ID Observations*.

October 22nd, 2010

How to Figure Out the Length of Antibiotic Therapy

One thing we ID doctors know — that other clinicians simply don't — is how long to treat a patient with antibiotics.

To figure out how long antibiotics need to be given, use the following rules:

1. Choose a multiple of 5 (fingers of the hand) or 7 (days of the week).
2. Is it an outpatient problem that is relatively mild? If so, choose something less than 10 days. After application of our multiples rule, this should be 5 or 7 days.
3. Is it *really* mild, so much so that antibiotics probably aren't needed at all but clinician or patient are insistent? Break the 5/7 rule and go with 3 days. Ditto uncomplicated cystitis in young women.
4. Is it a serious problem that occurs in the hospital or could end up leading to hospitalization? With the exception of community-acquired pneumonia (5 or 7 days), 10 days is the minimum.
5. Patient not doing better at the end of some course of therapy? Extend treatment, again using a multiple of 5 or 7 days.
6. Does the infection involve a bone or a heart valve? Four weeks (28 days) at least, often 6 weeks (42 days). Note that 5 weeks (35 days) is not an option — here the 5's and 7's cancel each other out, and chaos ensues.
7. The following lengths of therapy are inherently weird, and should generally be avoided: 2, 4, 6, 8, 9, 11, 12, 13 days. Also, 3.14159265 days.

In this highly data-driven exercise, it is imporant also to note the *number* of rules — *seven*, as in days of the week.

This limited evidence base currently weakly supports short durations of antibiotic therapy for several conditions in adults and in children, although there is also some evidence that short antibiotic treatments are less effective than long durations at achieving microbiological cure for children with pyelonephritis.

Journal List › PLoS One › v.13(3); 2018 › PMC5874047

PLoS One. 2018; 13(3): e0194858.
Published online 2018 Mar 28. doi: 10.1371/journal.pone.0194858

PMCID: PMC5874047
PMID: 29590188

Overview of systematic reviews assessing the evidence for shorter versus longer duration antibiotic treatment for bacterial infections in secondary care

Igho J. Onakpoya, Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing,[1,*] A. Sarah Walker, Data curation, Formal analysis, Writing – original draft, Writing – review & editing,[2] Pui S. Tan, Data curation, Writing – original draft, Writing – review & editing,[1] Elizabeth A. Spencer, Data curation, Writing – original draft, Writing – review & editing,[1] Oghenekome A. Gbinigie, Data curation, Writing – review & editing,[1] Johanna Cook, Conceptualization, Resources, Writing – original draft,[1] Martin J. Llewelyn, Conceptualization, Writing – original draft, Writing – review & editing,[3,4] and Christopher C. Butler, Conceptualization, Funding acquisition, Methodology, Supervision, Writing – original draft, Writing – review & editing[1]

Andrew C. Singer, Editor

Author information ► Article notes ► Copyright and License information ► Disclaimer

PLoS One

IS ONLY CENTRAL (YET) FEASABLE?

What colleagues (and I) say

- **Information+++**
  - IGGI very extensive and “up-to-date”/updated by a team of experts/peers
    - What do we do with “new disruptive evidence” on a local base?
  - Links hospital hygiene, reference labs, susceptibility testing references
- **Online (extranet)**
  - Young doctors use (only) smartphone
- **Standardization**
  - Regional networks, training centers, partners (OPAT),…

- FYI: occurance of (online) **“multidisciplinary consultation portals”**
  - https://www.pro-implant-foundation.org/ (Dr. Trampuz)
  - https://www.pancreatitis.nl/
  - https://www.radboudumc.nl/expertisecentra/schimmelinfecties-radboudumc-cwz/voor-verwijzers

NEW "DISRUPTIVE" PUBLICATIONS

Comparative efficacy of treatments for *Clostridium difficile* infection: a systematic review and network meta-analysis

Tumas Beinortas, Nicholas E Burr*, Mark H Wilcox, Venkataraman Subramanian*

Summary

Background Several new treatments for *Clostridium difficile* infections have been investigated. We aimed to compare and rank treatments for non-multiply recurrent infections with *C difficile* in adults.

Methods We
comparisons
and ClinicalT
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adults (at leas
tool to appra
recurrence fr
the number o

Findings Of 23 004 studies
included in the analysis. T
cure, fidaxomicin (odds
than vancomycin. Teic
surotomycin (0·66, 0
inferior to teicoplani
except for LFF571 (
low (Cochran's Q
ich comprised 5361 patients and 13 different treatments, were
evidence was rated as moderate to low. For sustained symptomatic
0·55–0·82) and teicoplanin (0·37, 0·14–0·94) were significantly better
0·10–0·70), ridinilazole (0·41, 0·19–0·88), fidaxomicin (0·49, 0·35–0·68),
nd vancomycin (0·73, 0·56–0·95) were better than metronidazole. Bacitracin was
·06–0·77) and fidaxomicin (0·40, 0·17–0·94), and tolevamer was inferior to all drugs
·18–1·39) and bacitracin (0·67, 0·28–1·58). Global heterogeneity of the entire network was
70; p=0·47).

Interpretation Among the treatments for non-multiply recurrent infections by *C difficile*, the highest quality evidence indicates that fidaxomicin provides a sustained symptomatic cure most frequently. Fidaxomicin is a better treatment option than vancomycin for all patients except those with severe infections with *C difficile* and could be considered as a first-line therapy. Metronidazole should not be recommended for treatment of *C difficile*.

"Highest quality evidence indicates that fidaxomicin provides a sustained symptomatic cure most frequently."
"Metronidazole should not be recommended for treatment of *C difficile*,"

Lancet Infect Dis 2018; 18: 1035–44

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See Comment page 936

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“PERSONALISED IGGI”?

EXTRA INFORMATIE (SPECIFIEK VOOR DE INDIVIDUELE OF INSTITUTIONELE ABONNEE)

18/11/2018 - Frans Johan commentaar verwijderen commentaar aanpassen

Comparative efficacy of treatments for Clostridium difficile infection: a systematic review and network meta-analysis .Lancet Infectious Diseases; september 2018:
Metronidazole should not be recommended for treatment of C difficile

Vul hier uw commentaar in:

Versturen

- ***Gedocumenteerde anti-infectieuze behandeling***
  - Behandeling van volwassenen zonder IgE gemedieerde allergie voor penicillines.
    - Therapeutische opties en standaard posologieën.
      - Eerste episode (stopzetten van de behandeling met het betrokken antibioticum is mogelijks de enige interventie die nodig is).
        - ▲ Milde of matige pathologie.
          - Δ Patiënten die metronidazole verdragen: metronidazole (500 mg po q8h of, indien po behandeling onmogelijk is, 1,5 g iv q24h of 500 mg iv q8h).
          - Δ Andere patiënten: vancomycine [(125 tot 250 mg po of, indien po behandeling onmogelijk is, via nasogastrische sonde) q6h (magistrale bereiding)].
        - ▲ Ernstige, al dan niet gecompliceerde pathologie.

(TEMPORARY) COMBINATION?

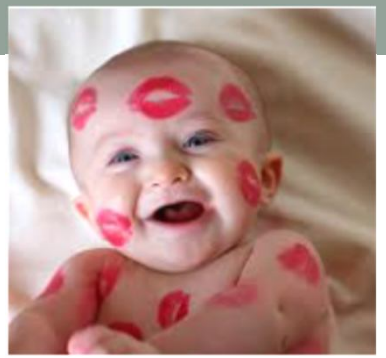
- “Personalised” IGGI? Quid SWAB-model NL?
- Imelda (et al.): 1 year next to each other: combination
  - One central solution: the way to go!
    - Close interaction/discussion? “IGGI community”
      - ASM ClinMicroNet!

clinmicronet *(891)*

The ClinMicroNet is composed of an international group of clinical microbiology laboratory directors who openly and daily communicate with one another through this medium. The criteria for membership in ClinMicroNet are a Contributing Member of ASM and are Doctoral-level clinical microbiology laboratory director or Laboratory manager with national standing and peer recognition. To request a subscription please contact Mike Miller at jmm8@comcast.net.

(TEMPORARY) COMBINATION?

CONCLUSIONS



- There is **no** absolute standard in literature that obligates a hospital to keep a **local antibiotic guide**.
- Overall **local resistance** rates are **poorly standardized**
  - performant benchmarking is feasable **("Nethmap"?**).
- National guidelines should include the **resistance%** that was used (or not available) and should mention **cut-off's**
- **Individual clinical "resistance-risk assessment"** is probably at least as important as general local, limited resistance data
- In the near future, it seams feasable to use only a central, (if very practical, **IGGI Community?**), **national Belgian IGGI guideline? = KISS**


Symptom-Free Pee: LET IT BE
A national initiative to stop inappropriate antibiotic use for asymptomatic bacteriuria in elderly patients.
STOP
WAIT
GO
STOP treating asymptomatic bacteriuria; it is not an infection
STOP testing foul-smelling, dark, or cloudy urine
WAIT and rehydrate patients who develop changes in mental status, behaviour, or function without typical urinary tract infection symptoms
GO to urinalysis and urine culture if typical signs and symptoms of urinary tract infection are present
For more directions and guidance:
www.ammi.ca
#SymptomFreeLetItBe
AMMI™ Canada