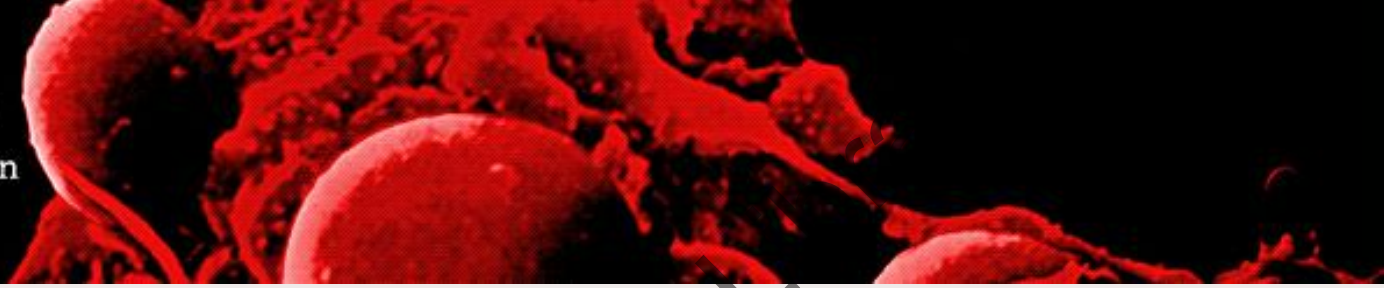




Nijmegen Institute for
Infection, Inflammation
& Immunity



Barriers to implementation of a local antibiotic policy and how to remove them

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Implementation of knowledge into daily clinical practice

“The profession has placed high value on developing the basic science of medicine; it has not emphasised the process by which the science is translated into practice.”

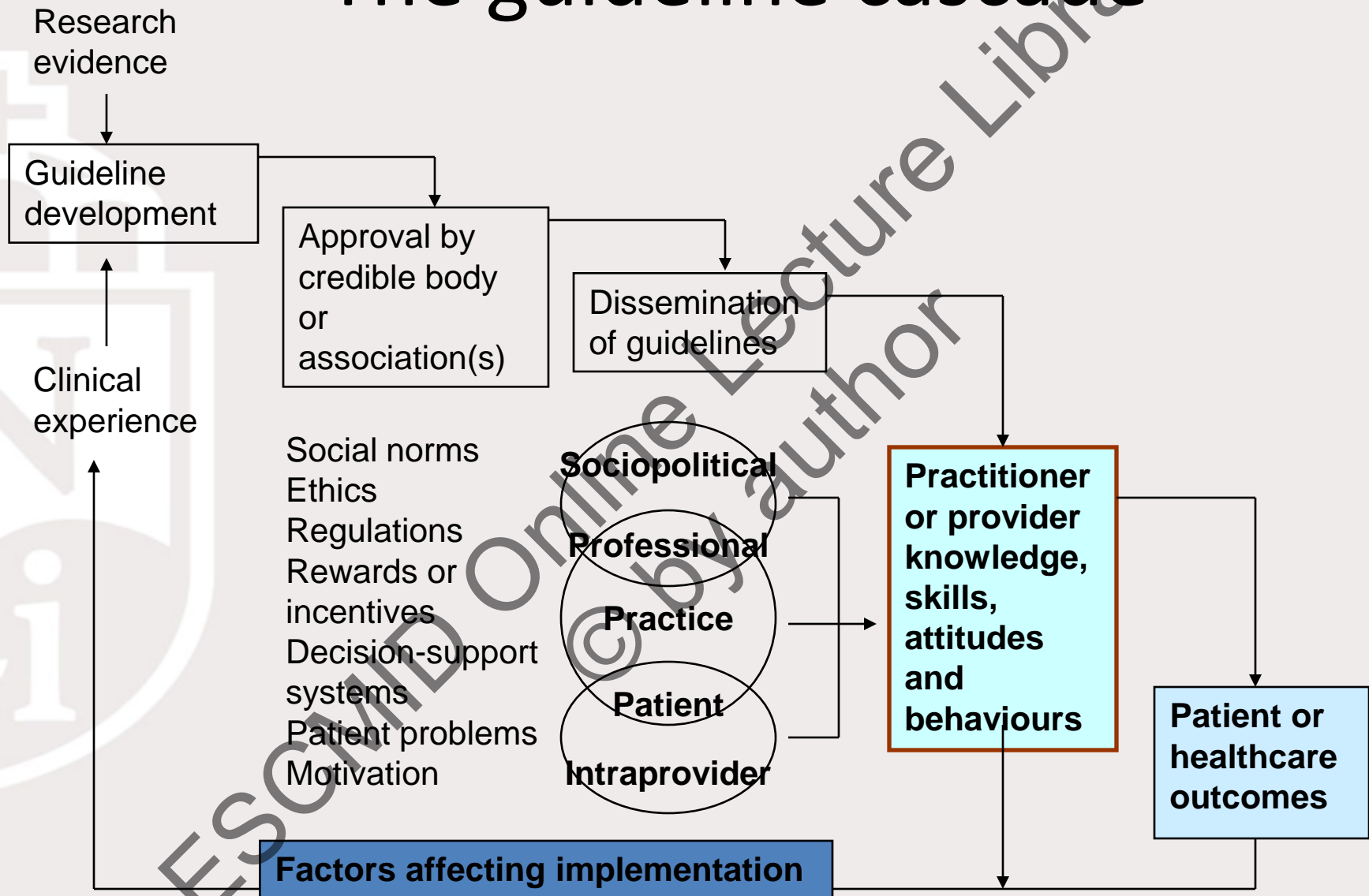
Practice guidelines for antibiotic policy

Practice guidelines aim to

- improve quality
- reduce costs
- reduce unwanted variation

Implementation

The guideline cascade



Practice guidelines

~ 50% of the hospital use of antibiotics is inappropriate

Adherence to guidelines:

20 - 100%

- Inquiry in The Netherlands: more than 75 percent of respondents does not have (any) objections towards clinical practice guidelines

Van Everdingen, Medisch Contact 2003;58: p. 12-21.

- Italian doctors consider guidelines as forced upon them and as an instrument for cost containment, more than a support for clinical practice.

Formoso et al. Arch Intern Med, 2001. 161: p. 2037-2042.

Factors that influence change

- Limiting = barriers
 - Facilitating = facilitators
-

Barriers to implementation of antibiotic policy

Barriers are factors that limit or restrict complete physician adherence to a guideline

[Cabana et al

JAMA 282:1458, 1999]

Barriers to implementation of antibiotic policy

- Barriers that cannot be changed
 - Barriers that can be changed
-

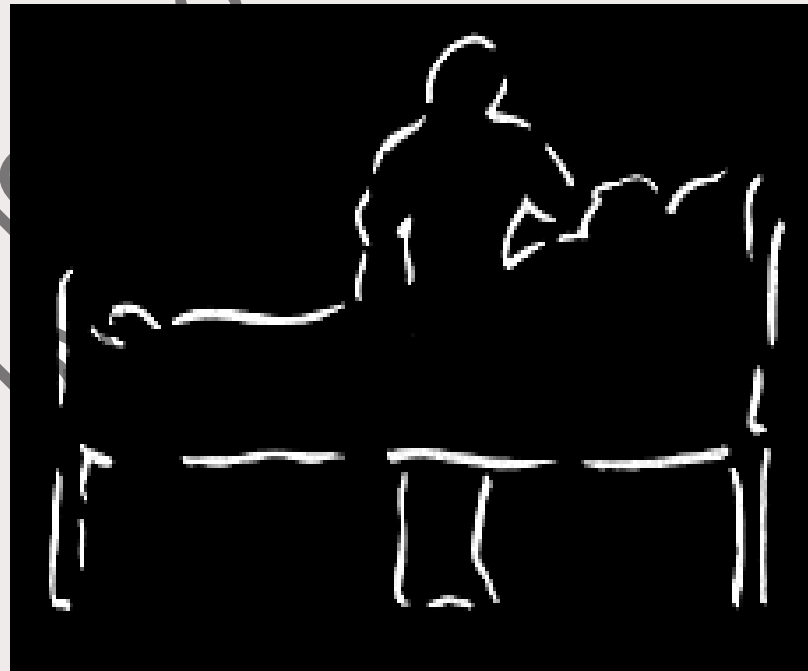
Barriers to implementation of antibiotic policy

Barriers can be

- cognitive
 - behavioural
 - organisational
 - sociocultural
 - financial
-

Barriers to implementation of antibiotic policy

1. The culture
2. The system
3. The physician
4. The patient



1. Barriers in the culture

- There are profound cultural differences between countries that influence prescribing habits
-

[*Hofstede -- Haaijer-Ruskamp*] in:

Hulscher M, Grol R & Van der Meer JWM. *Lancet* 2010; 10, March 2010, p 167-75

Barriers in the culture

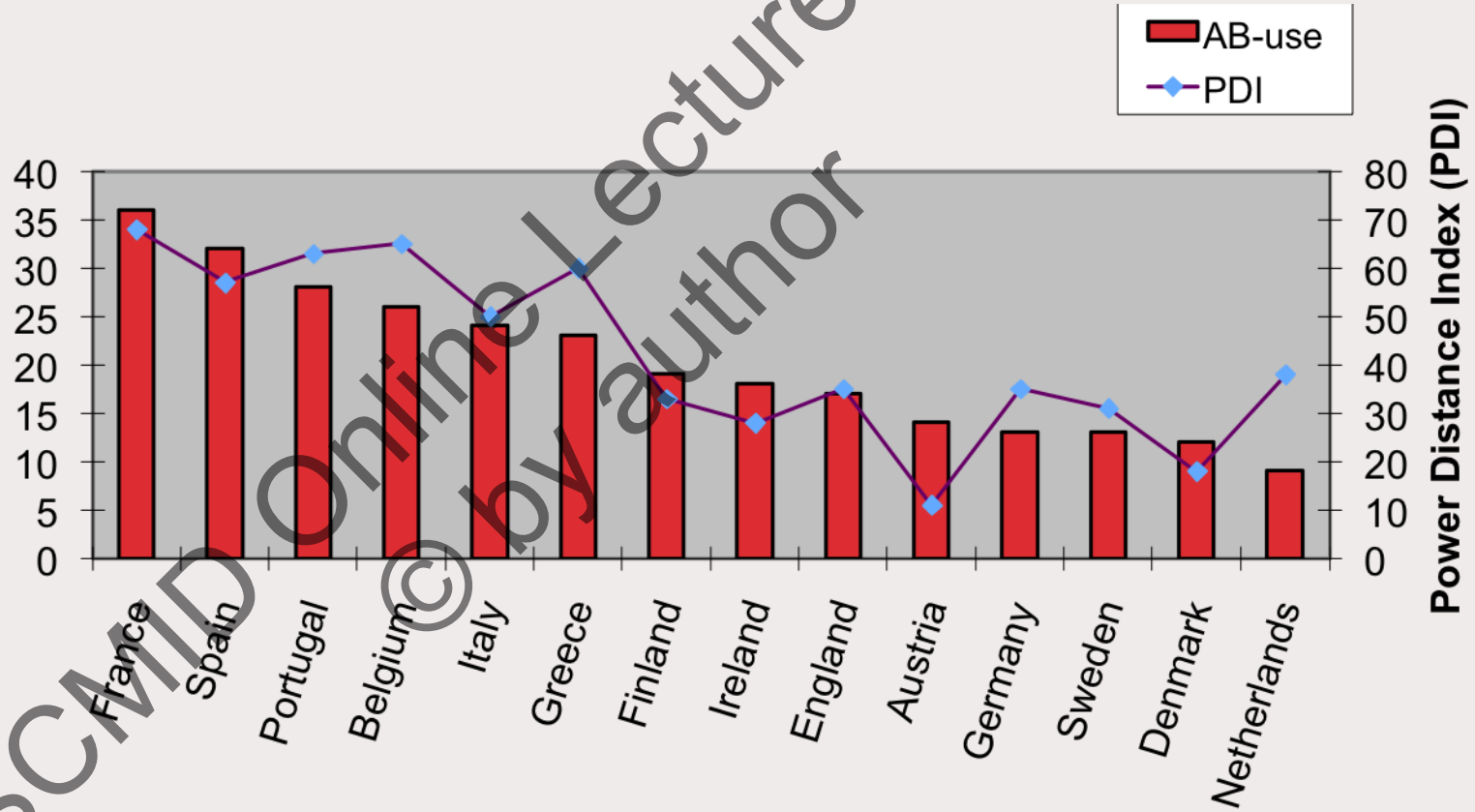
Hofstede's Dimensions and Scores.

- Power Distance
- Individualism
- Uncertainty Avoidance
- Masculinity
- Long term orientation

[//geert-hofstede.international-business-center.com](http://geert-hofstede.international-business-center.com)

Antibiotic use and power distance index

Antibiotic use in DDD/
1000
inhabitants and
day



Barriers in the culture

Consumers/patients differ in

- Ideas about health
 - Ideas about cause of disease
 - Labeling of illness
 - Coping strategies
 - Ideas and expectations about treatment
-

Barriers in the culture

- Egalitarian societies (NL, UK, Scandinavia) consume fewer antibiotics than hierarchical societies (F, I, Spain, Portugal, Greece)
- Coincides with protestant and catholic countries

Deschepper et al. BMC Health Serv Res 2008;8:123

Kooijker & van der Wijst. Europeans and their medicines. Social and Cultural Planning
IOffice of the Netherlands, Dongen (2003)

2. Barriers in the system

- Lack of resources
 - Reimbursement systems
 - Lack of time
 - Organisational constraints
 - Other persons in the system
-

Watching the system

Outside to inside

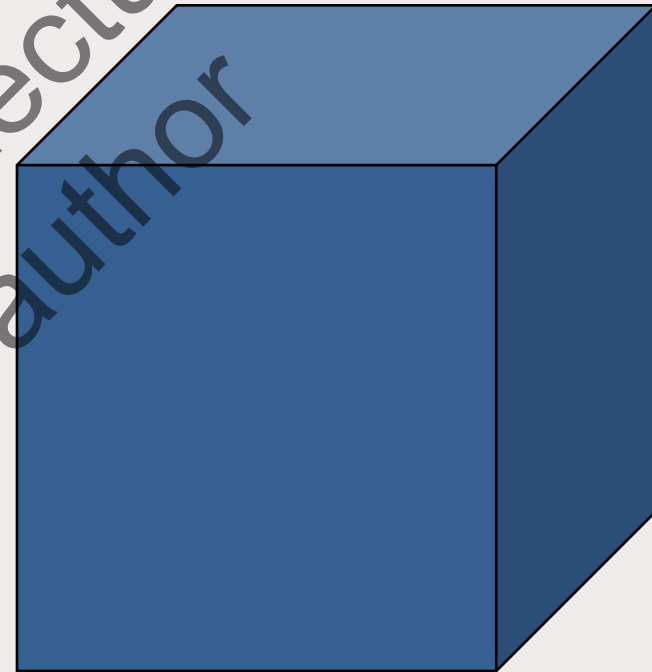
Inside to outside

Top to bottom

Bottom to top,

and ...

Front to backside

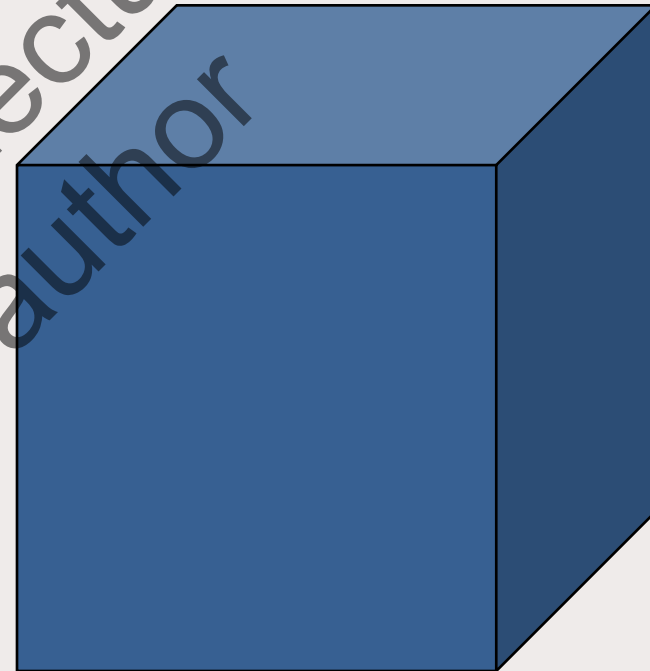


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Watching the system

Backside:

Contains persons
with specific
interests
with their own aims



Backside of the organisation

To reach compliance with peri-operative antibiotic prophylaxis (e.g. timing) one needs to address anaesthesiologists, rather than surgeons.

Gyssens et al. Pharm World Sci 1997;19:89-92

Gyssens et al. J Antimicrob Chemother 1996;38:301-8

3. Barriers in physicians

- Barriers that cannot be changed:
Gender, age, ethnicity, specialty
 - Barriers that can be changed:
Culture (?), knowledge, ...
-

Barriers in physicians

Changing physician behavior is considered by many to be an exercise in futility - an unattainable goal intended only to produce premature aging in those seeking the change. The more optimistic might describe the process as uniquely challenging.

Barriers in physicians

...The end result is the creation of physicians who have deep-seated confidence in their own abilities and feel secure in making decisions with which others may strongly disagree...

... The most important quality of a physician is the ability to exercise independent judgment in the care of a individual patient..

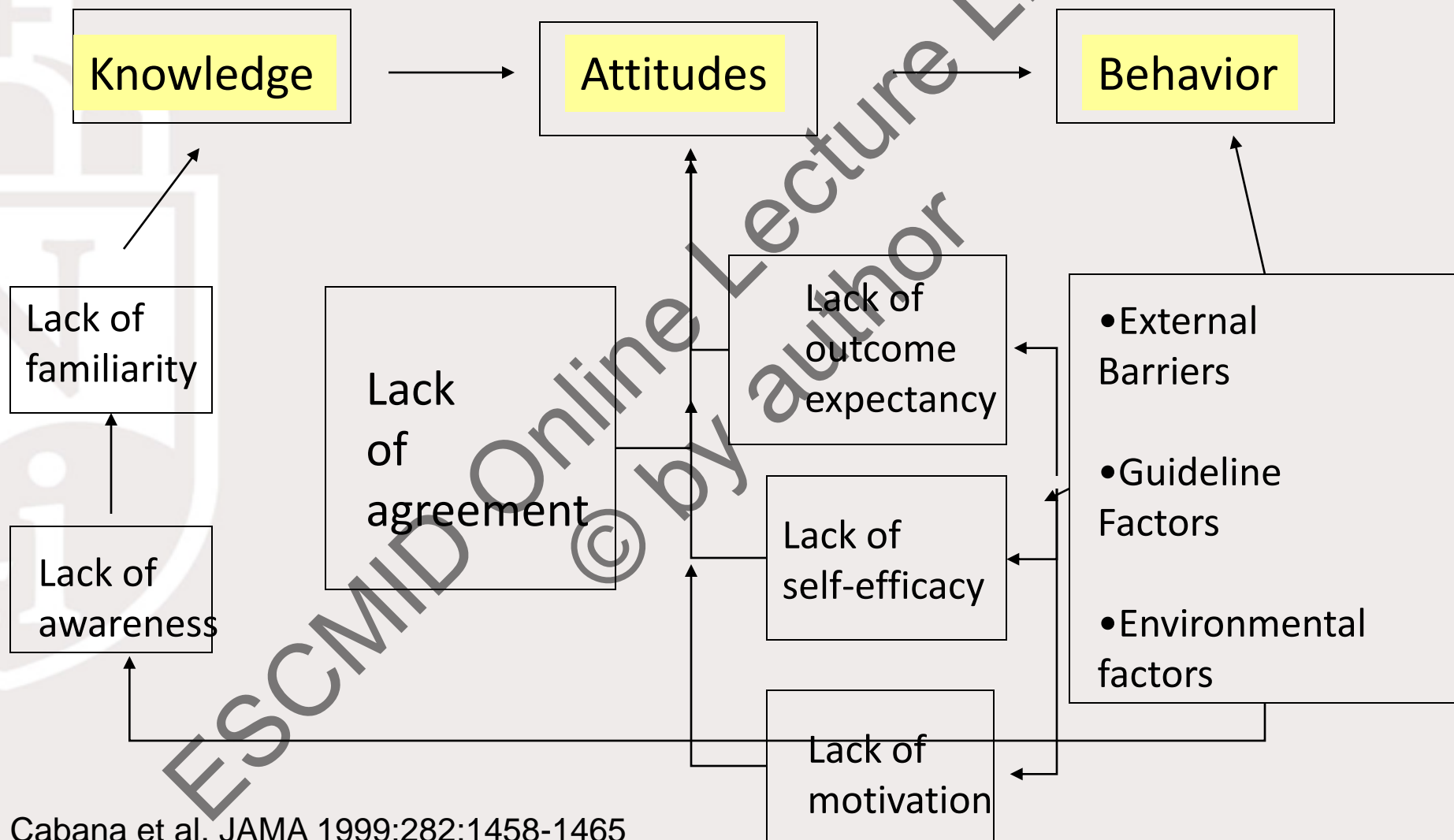
Behaviour change in physicians

Sequence:

Knowledge → Attitudes → Behaviour

Woolf SH Arch Int Med 153:2646, 1993

Barriers to physician adherence to practice guidelines in relation to (behavior) change; a professional perception model



Cabana et al, JAMA 1999;282:1458-1465

Barriers in physicians

1. Knowledge: lack of awareness
lack of familiarity
2. Attitude: lack of agreement
lack of self-efficacy
lack of outcome expectancy
inertia
3. Behaviour: external barriers

Barriers in physicians

1. Knowledge: lack of awareness
lack of familiarity



- Amount of information
- Time needed to stay informed
- Guideline accessibility

Cabana et al JAMA 282:1458, 1999

Barriers in physicians

1. Knowledge: lack of awareness
lack of familiarity
2. Attitude: lack of agreement
lack of self-efficacy
lack of outcome expectancy
inertia
3. Behaviour: external barriers

Comply with
the guidelines,
that is good
for your
patient

To hell with
guidelines,
Your own
way is OK!



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Barriers in physicians

Attitude of supervisors
and local opinion leaders:
participation
&
endorsement

Guidelines are for beginners!



Features of guidelines that may improve physician adherence

- Simplicity
- Feasibility/applicability
- Flexibility (allowing for personal judgement)
- Testing/piloting (shown to improve outcomes)
- Intended to improve quality of care
- Not intended to reduce costs
- Not used in litigation or disciplinary actions

Methods to identify barriers (1)

Qualitative

- Focus group discussions
 - with professionals
 - with patients
- Face-to-face interviews
- Telephone interviews

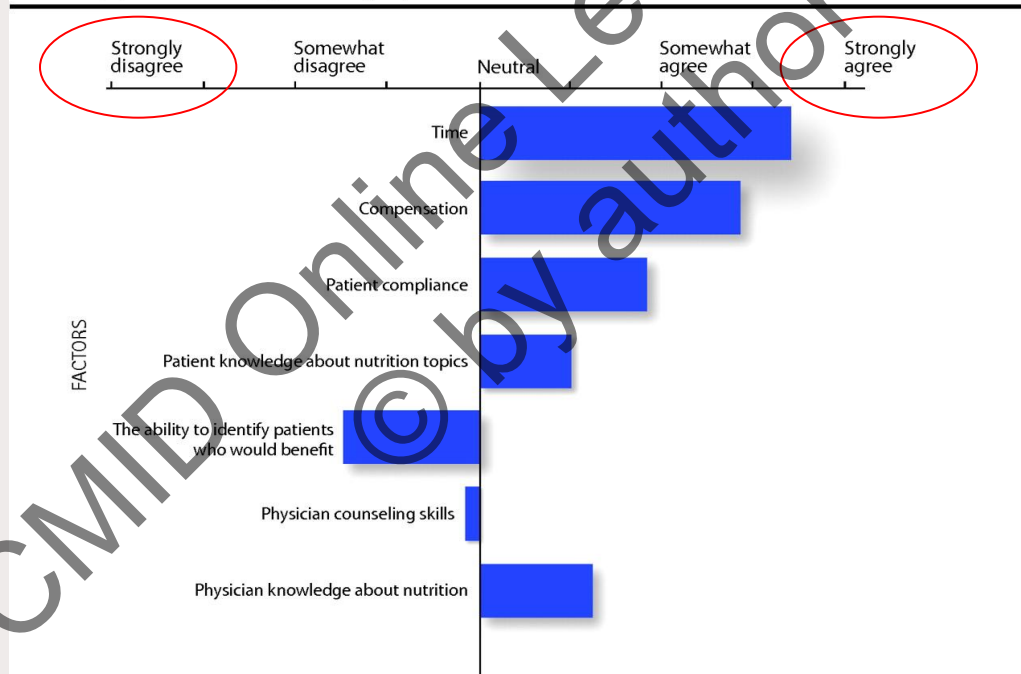
Quantitative

- Surveys: (semi) structured questionnaires
 - Paper
 - On line (email, web based ..)

Methods to report barriers (2)

5-point Likert scale

Figure 2. Barriers to providing nutrition counseling in family practice. Physicians were asked to indicate the extent to which each of these factors were barriers to effective nutrition counseling in the family practice setting; for the purpose of illustration only, neutral was considered to be zero.



Wynn et al. Can Fam Physician 2010;56:e109-16

Example 1. Barriers analysis:

Multisite intervention on Surgical Prophylaxis in the Netherlands. The “CHIPS” study

12 Dutch hospitals

EDUCATIONAL INTERVENTION:

- Feedback of quality-of-use review
- Implementation of national guidelines

Before : analysis of barriers

Van Kasteren et al. J Antimicrob Chemother 2003; 2005; Clin Infect Dis 2007
Mannien et al. Infect Control Hosp Epidemiol 2005

Example 1. Questionnaire and focus groups

– **item** *timing within 30 minutes before incision*

Questionnaire:

Not a high priority for anaesthetists, and there were barriers affecting **attitude**, such as lack of motivation to change or a lack of outcome expectancy.

Focus groups:

Anaesthetists and anaesthesiology nurses pointed out several determinants of the timing of the first dose that could be identified as organisational constraints

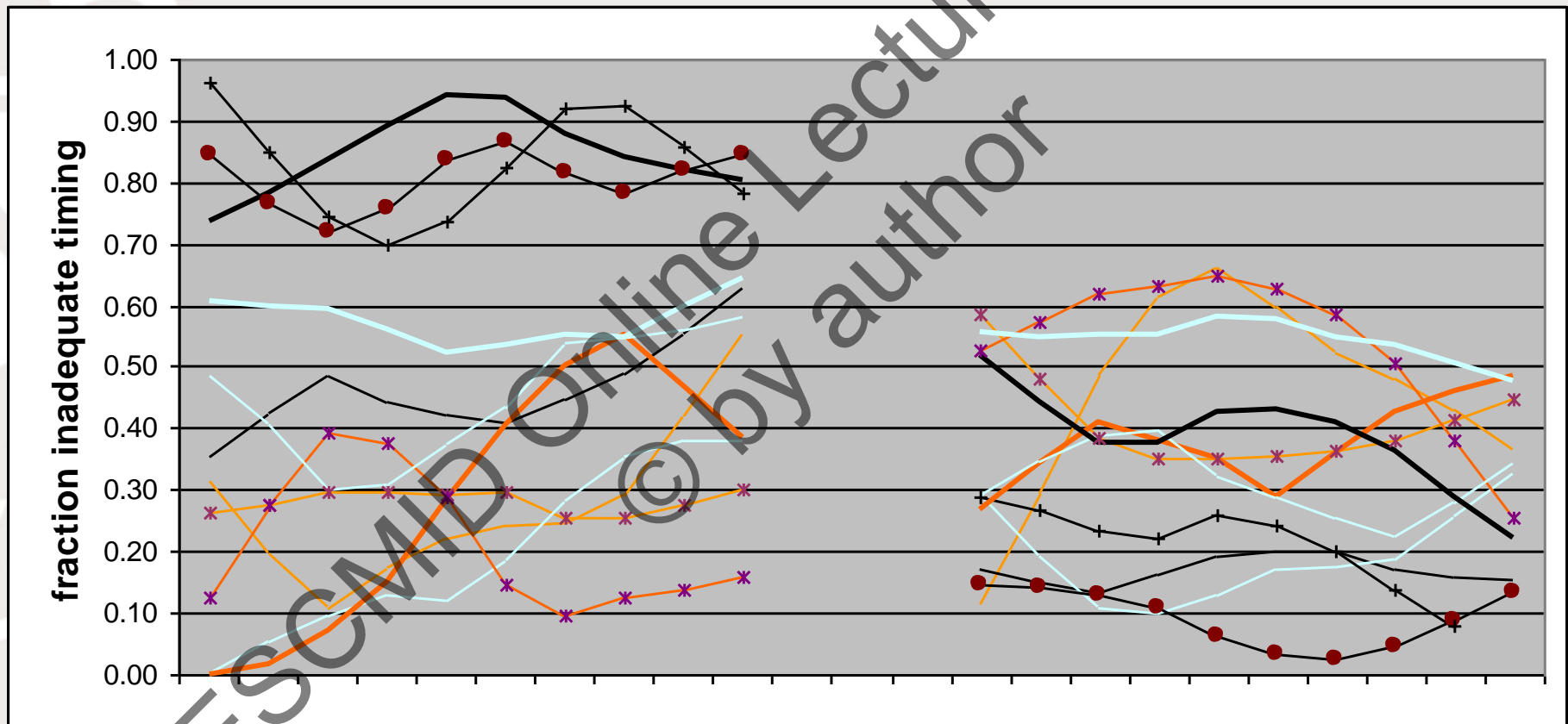
- time of arrival at the surgical suite
- time spend in the holding area
- the need of a test dose before the actual administration of the full dose of the antibiotic
- delaying administration after intubation
- administration as infusion instead of bolus injection
- a written order for prophylaxis instead of the need to wait for instructions.

Example 1. Barriers in the CHIPS study (NL)

12 Hospitals

| Experienced barrier | Antibiotic choice | | duration | | timing | |
|--|--------------------|---------------------------|-----------------|---------------------------|----------------------------|---------------------------|
| | Hospitals (A to L) | | | | | |
| | Barrier present | Successful implementation | Barrier present | Successful implementation | Barrier present | Successful implementation |
| Internal barriers knowledge | | | | | | |
| <i>Lack of awareness</i> | 1 (F) | 1 (F) | - | - | - | - |
| Internal barriers attitude | | | | | | |
| <i>Lack of agreement</i> | 2 (B,F) | 0 | 7 (C,D,F,G,I,K) | 2 (G,I) | - | - |
| <i>Lack of outcome expectancy</i> | - | - | 5 (C,D,F,K,L) | 0 | 1 (M) | 0 (M) |
| <i>Lack of motivation</i> | - | - | - | - | 1 (D) | 0 (D) |
| External barriers | | | | | | |
| <i>Environmental factors, organisational constraints</i> | 2 (C,M) | 0 | 1 (H) | 1 (H) | 11 (A,B,C,E,F,G,H,I,J,K,L) | 4 (G,H,J,K) |

Example 1. Intervention to improve the Timing of prophylaxis (11 hospitals), orthopedic procedures



Example 2. Barriers analysis and how to remove them The Institute for Healthcare Improvement (US)

Lack of support by leadership

Solution: Use opinion leaders (physicians)/champions and data and if possible; a business case for the project may help to win leadership support.

Uneven physician acceptance of new practices

Solution: Use physician opinion leaders, review the medical literature, and feed back data on a surgeon-specific level. Work first with your early adopters and use their stories to convince the majority.

www.ihl.org/IHI/Programs/Campaign



Example 3. MATRA project -Surgical prophylaxis guideline, Zagreb, November 2007

Solutions to remove the barriers

- Involvement of surgeons and anesthesiologists. How about the **nurses**?
- More involvement of **certain** societies
- Introduce the concept of « **local champions** » to disseminate into professional groups
- Profile of the local champion
 - Motivated
 - Clinician!
 - Charismatic
 - Enthusiastic
 - Well informed
 - Authoritative?
 - Experienced

Dutch Ministry of Foreign Affairs. The Matra Programme. Available from: http://www.minbuza.nl/en/themes/european-cooperation/the_matra_programme_file

Prins JM, Degener JE, de Neeling AJ, Gyssens IC, the SWAB board . Experiences with the Dutch Working Party on Antibiotic Policy (SWAB). Euro Surveill. 2008;13(46):pii=19037. <http://www.eurosurveillance.org/>

Example 3. MATRA project -Surgical prophylaxis guideline

- “The most important barrier to implementation will be the difference between the recommendation of an evidence based guideline regarding duration of prophylaxis (single dose or max. 24h) and actual practice in Croatia (often several days)”

MATRA Workshop report, Zagreb November 2006

See also Goossens, ESAC pps, this course book

Example 4. Barriers identification

-item *Earlier initiation of antibiotics for severe infections*

Delay is common and multi-factorial:

- Physicians
 - Habits for taking culture specimens
 - Nurses
 - Accessibility of antibiotics in ED
 - Financial restraints
-

Natsch et al Eur J Clin Microb Infect Dis 17:681, 1998

Natsch et al Arch Int Med 160:1317, 2000

Conclusion (1)

Implementation of guidelines

- Good preparation and planning
- Creating support/acceptance by stakeholders
- Development of realistic goals for improvement
- Practical tools for support
- **Analysis of barriers to implementation**
- Plan for interventions
- Development of indicators for monitoring

Grol & Grimshaw. Lancet 2003 362;1225-1230

Conclusion (2)

- ✓ **Start** an intervention with an inventory of **barriers and facilitators**
- ✓ 'Evidence' and consensus are important
- ✓ This allows for revision and evaluation of planned intervention strategies