

Krankenhaushygiene in Europa



Prof. Dr. Alex W. Friedrich
Medical Microbiology and Infection Prevention
University Medical Center Groningen
Netherlands

Disclosure of speaker's interests

(Potential) conflict of interest

None

Potentially relevant company relationships in connection with event

None

Sponsorship or research funding

Several National and European Grants

The European Union's Horizon 2020
COFUND programme



University Medical Center Groningen
(UMCG)



Ministerie van Volksgezondheid,
Welzijn en Sport

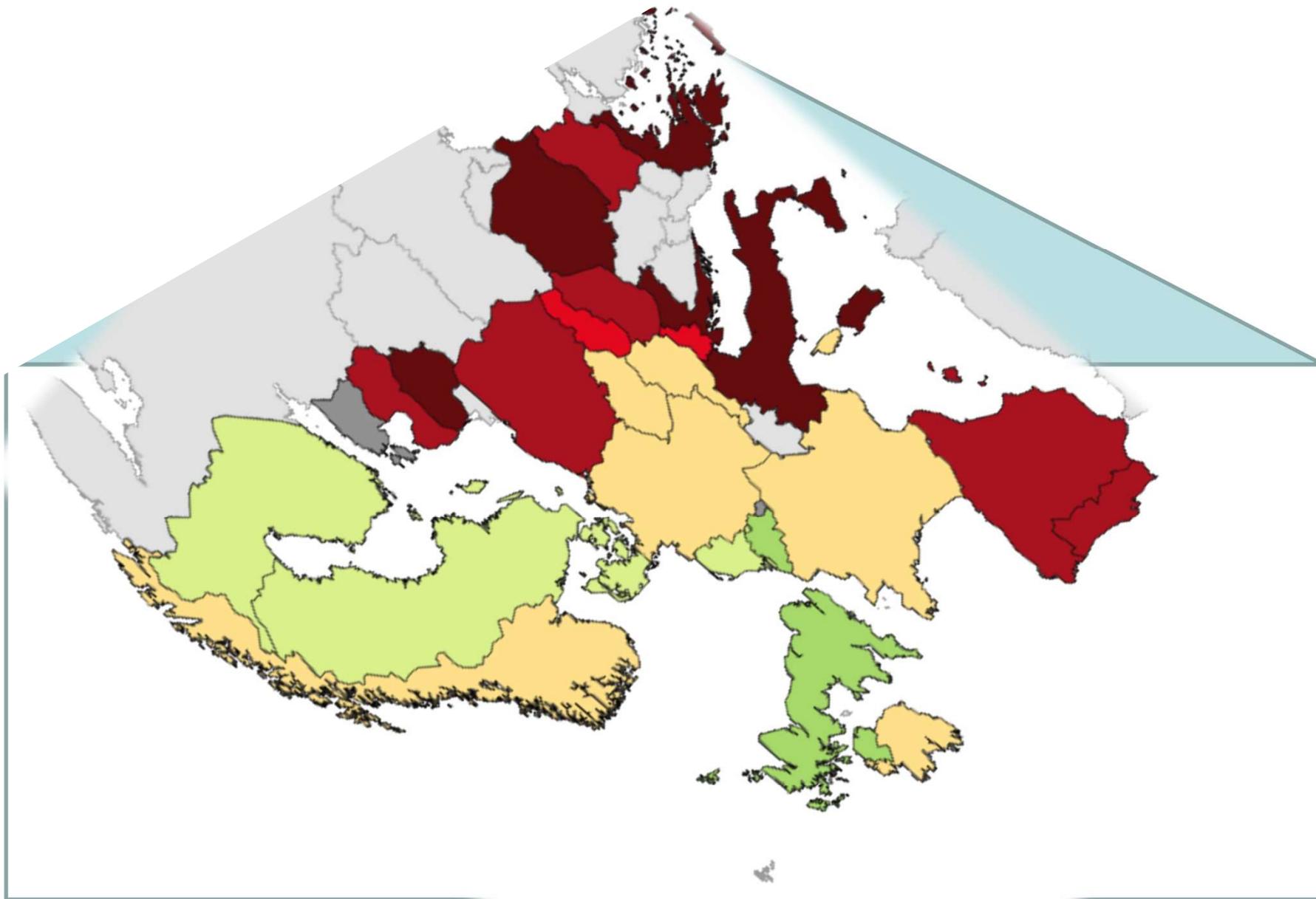
Die kommenden 30 Minuten...

- Herausforderungen
- Verborgene Ursachen
- Über Grenzen hinweg
- Netzwerk-Prävention

Stellen wir uns vor, wir wohnen im Erdgeschoos eines Hauses und ein Feuer brennt im Dachgeschoss.
What machen wir?

- A. Wir schliessen unsere Türe, das Feuer kommt dann nicht durch
- B. Wir drehen den Hahn fürs Dachgeschoss ab, denn wir brauchen ja das Wasser
- C. Wir schützen unsere eigenen Wohnungen auch durch helfen der Nachbarn





CR-A. *baumannii*, EARS-Net, 2017



Epidemiology of Extended-Spectrum β -Lactamase-Producing *E. coli* and Vancomycin-Resistant Enterococci in the Northern Dutch–German Cross-Border Region

OPEN ACCESS

Edited by:
John R. Battista,
Louisiana State University,
United States

Reviewed by:
Zhuofei Xu,

Xuwei Zhou^{1*}, Silvia García-Cobos^{1*}, Gijs J. H. M. Ruijs², Greetje A. Kampinga¹, Jan P. Arends¹, Dirk M. Borst¹, Lieke V. Möller³, Nicole D. Holman⁴, Theo A. Schuurs⁵, Lesla E. Bruijnesteijn van Coppenraet², Jan F. Weel⁵, Jan H. van Zeijl⁵, Robin Köck^{6,7}, John W. A. Rossen^{1†} and Alexander W. Friedrich^{1†}

Parameter	EUREGIO-NL	EUREGIO-DE	Ratio
MRSA/100 admissions*	0,11	1,1	1:10
VRE/ 100 admissions	1,3	3,9	1:3
ESBL/100 admissions	6,1	7,7	1:1
CR-MO/100 admissions**	0	0,03	1:1

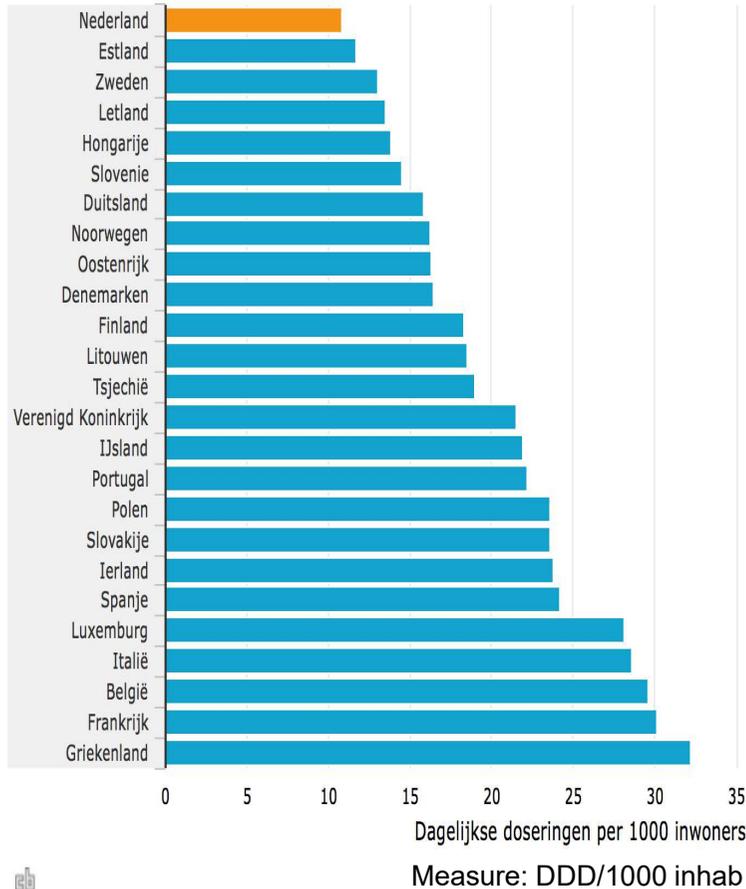
** prelim. results, Corinna Glasner, Laufende Screening-Studie, EurHealth-1Health

Die kommenden 23 Minuten...

- Herausforderungen
- Verborgene Ursachen
- Über Grenzen hinweg
- Netzwerk-Prävention

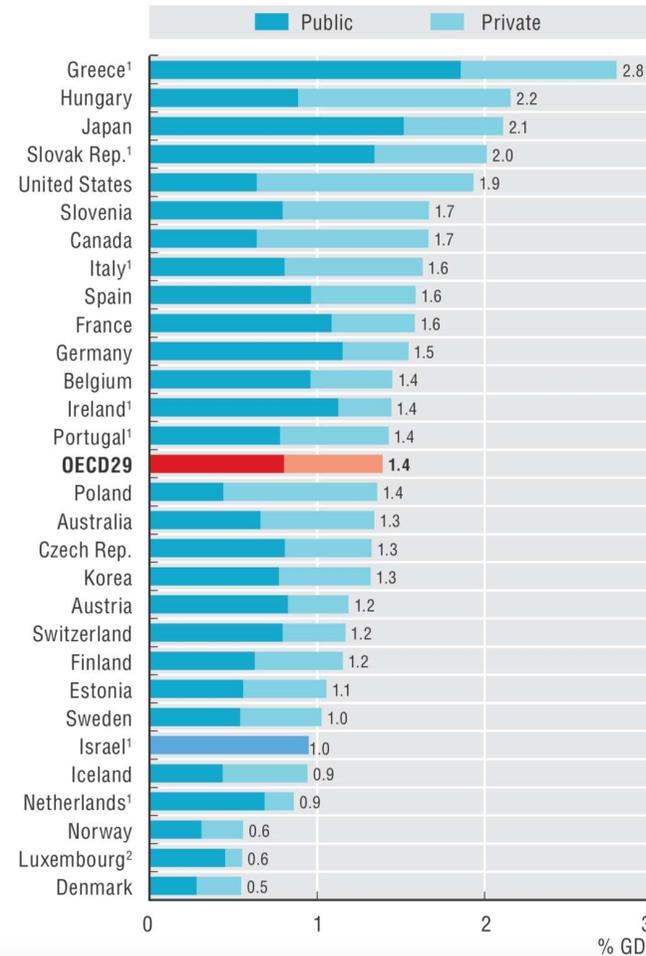
Comparison of rates of antibiotic prescription

Verstreckte antibiotica in Europa, 2013



Bron: OESO

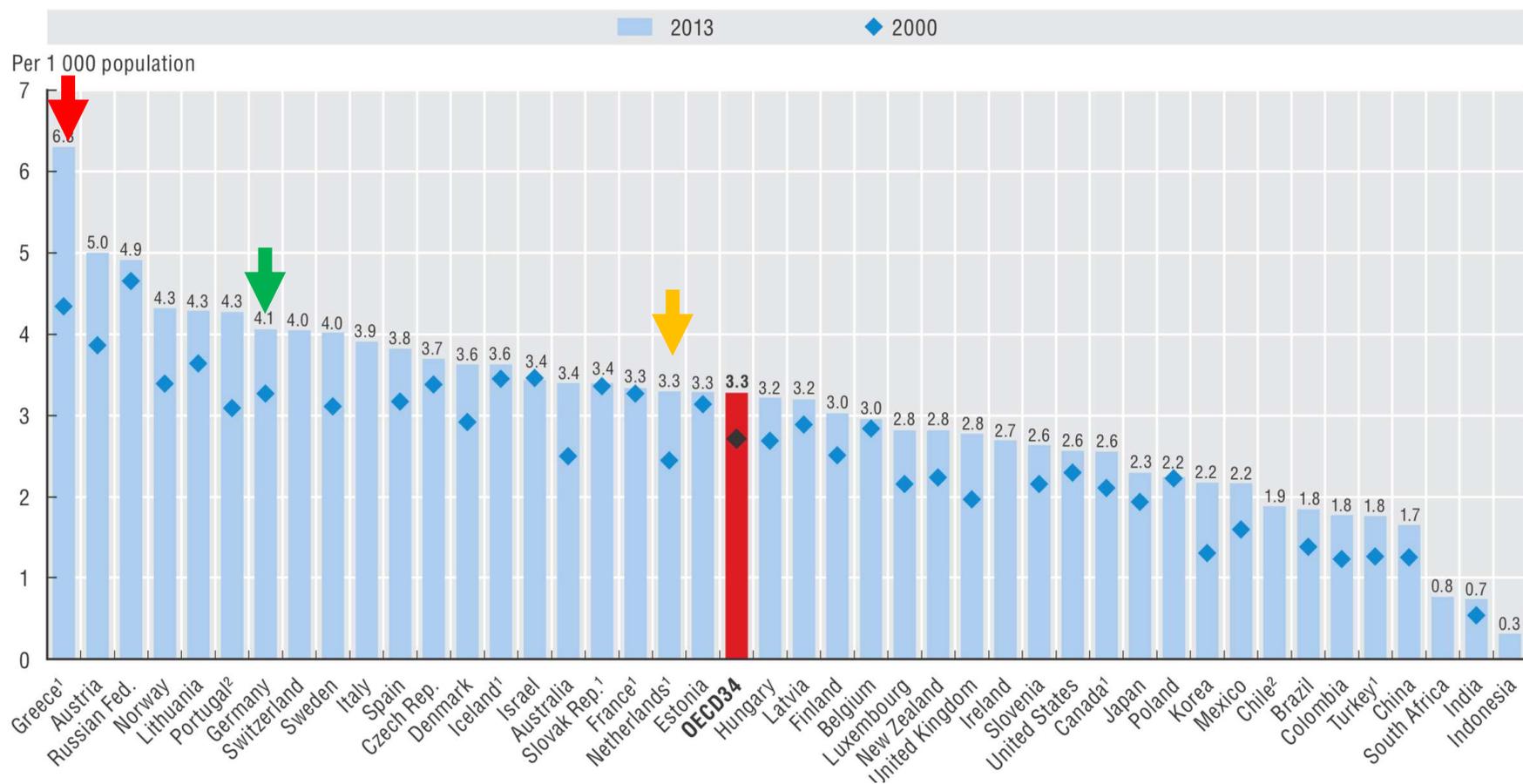
10.3. Expenditure on pharmaceuticals as a share of GDP, 2013 (or nearest year)



Eurobarometer 2015

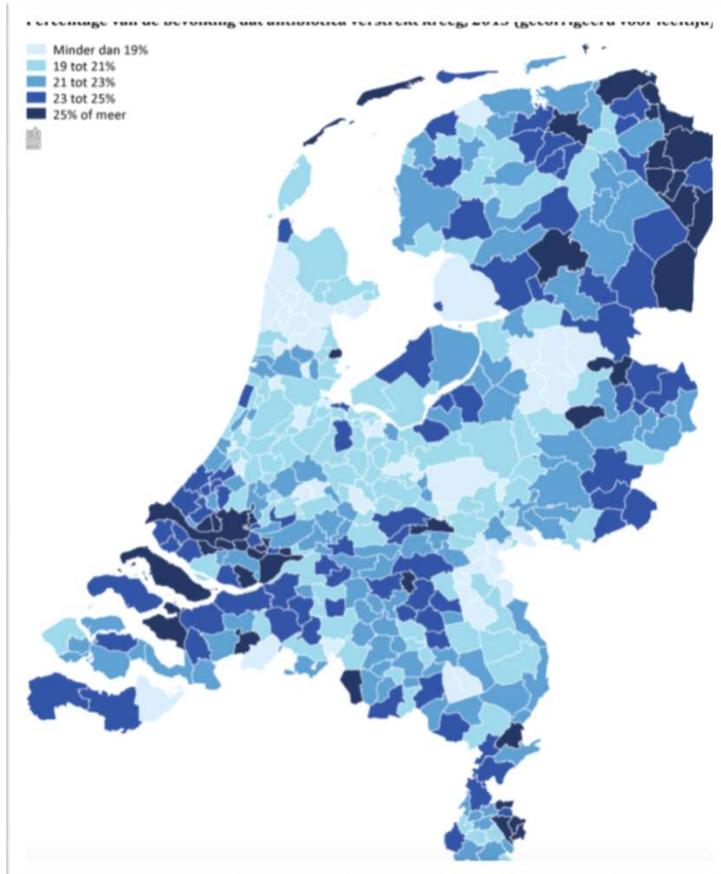
On national level

5.1. Practising doctors per 1 000 population, 2000 and 2013 (or nearest year)



Comparison of rates of antibiotic prescription

Netherlands



Niedersachsen

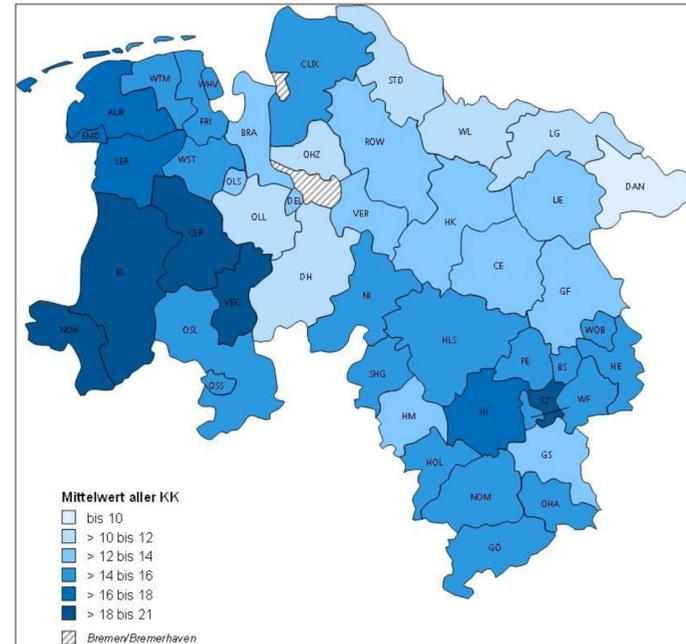
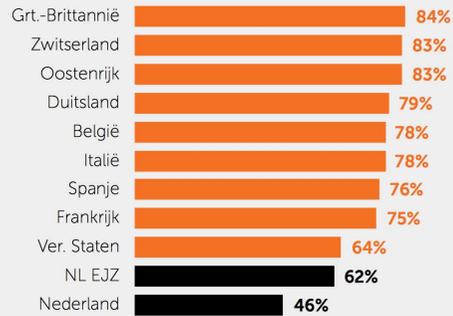


Abbildung 12: Verordnungsdichte(DDD/1000 Versichertentage) in den Landkreisen und kreisfreien Städten Niedersachsens 2015 über alle Altersklassen und alle ATC-Codes.

On regional level

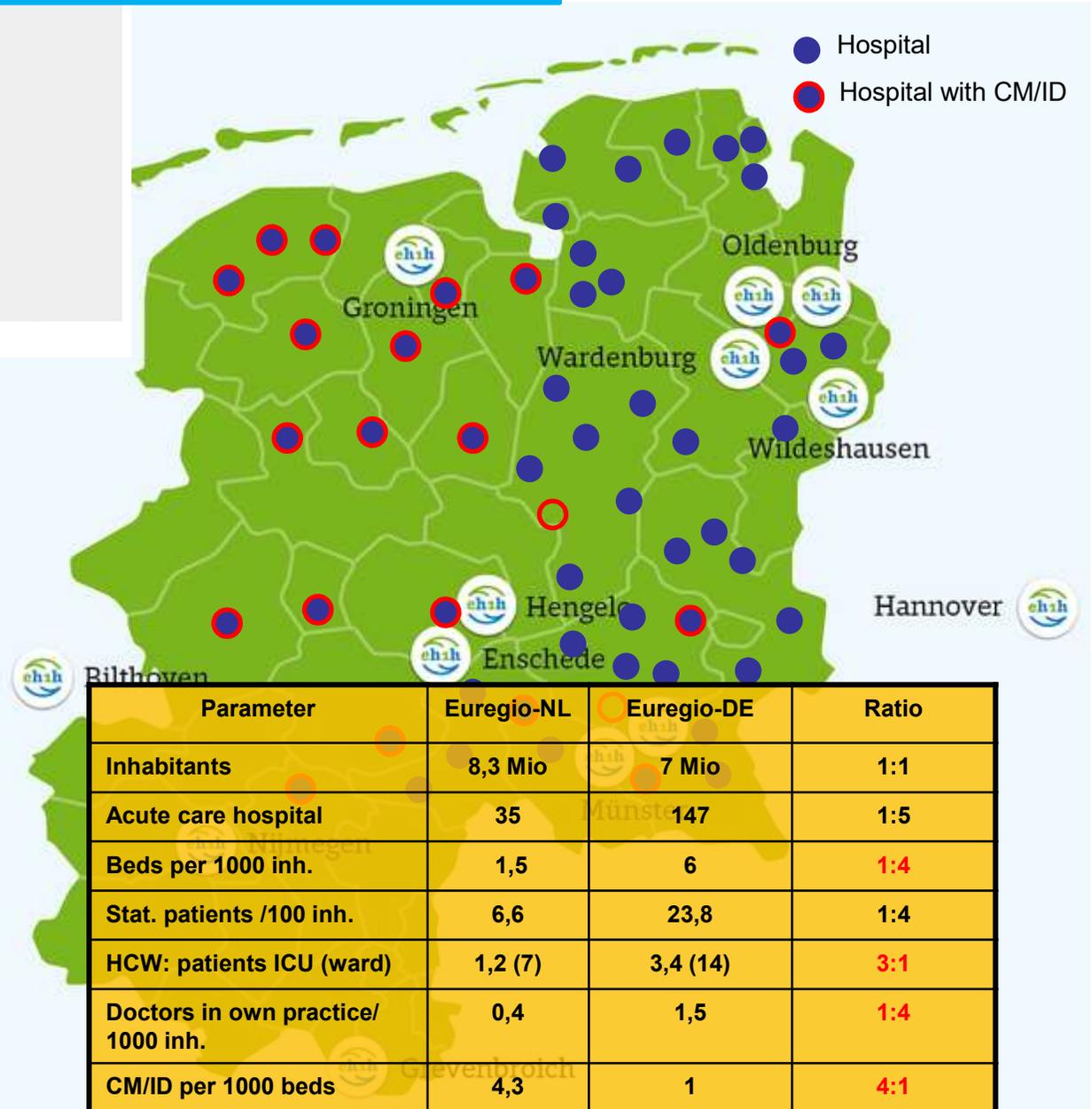
Measure: DDD/1000 inhab

Systemunderschiede



Bron: OECD Health Data

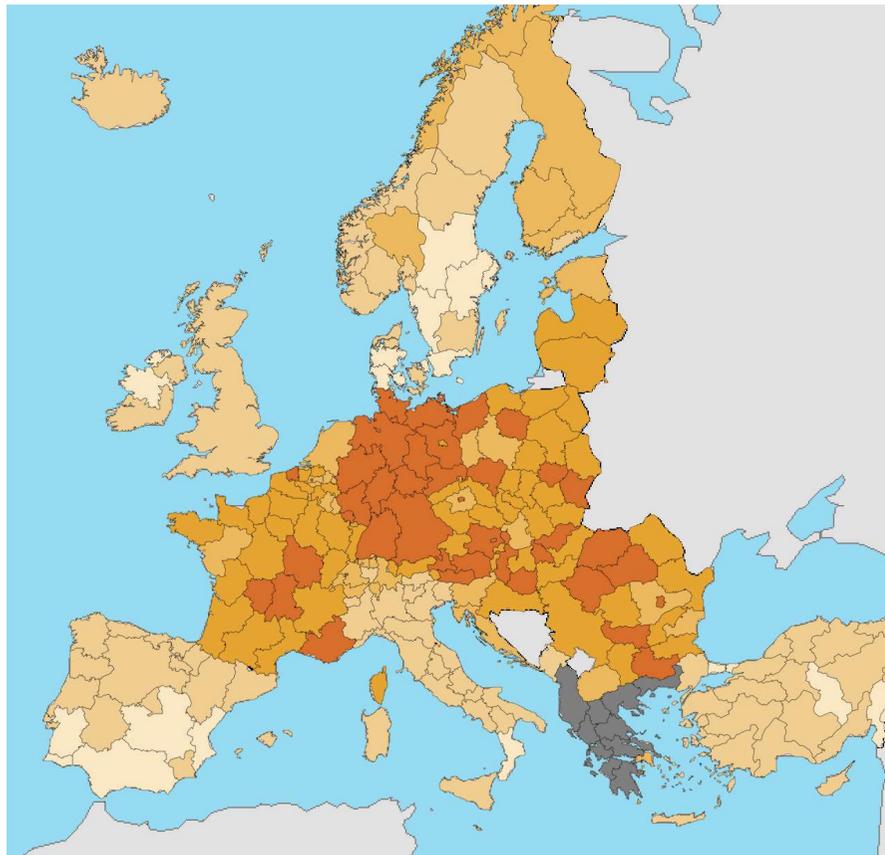
Euregional Antibiotic Resistance and Infection Prevention



Data: EurHealth-1-health 2018

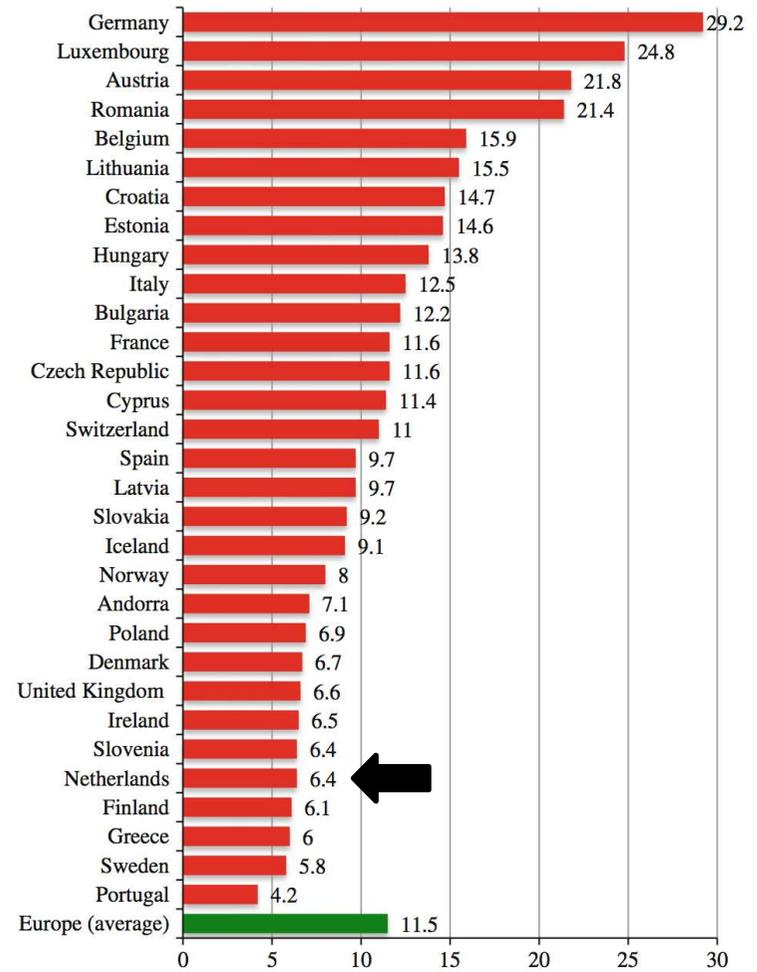
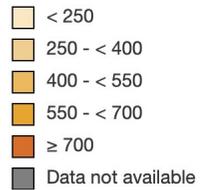
A. Rhodes
P. Ferdinande
H. Flaatten
B. Guidet
P. G. Metnitz
R. P. Moreno

The variability of critical care bed numbers in Europe



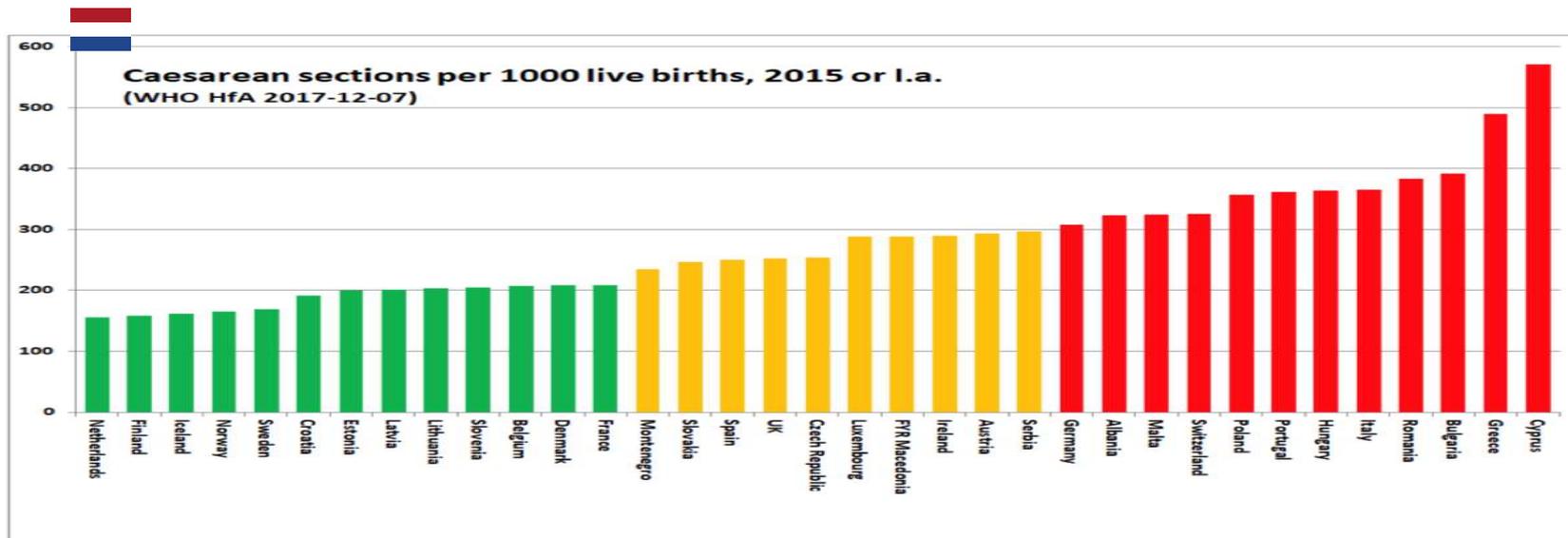
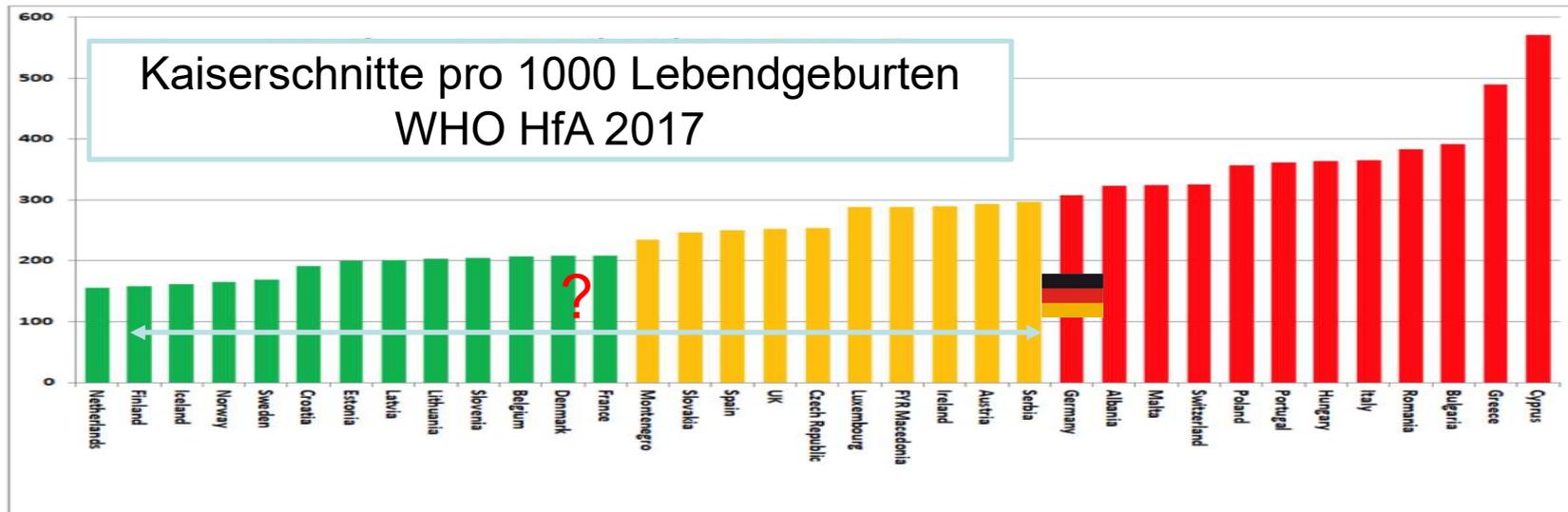
3.3 Number of hospital beds

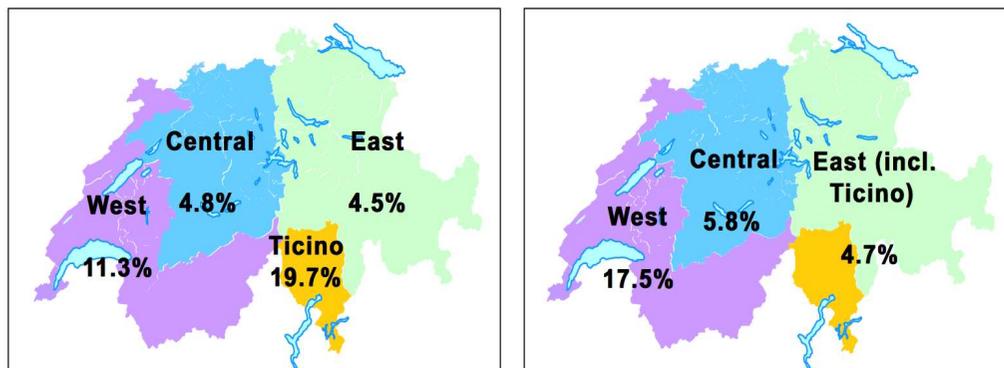
Number of hospital beds relative to population size, by NUTS 2 regions, 2015 (number per 100 000 inhabitants, EU-28 = 515)



Total numbers of critical care beds per 100,000 capita of population

Unterschiede stellen Fragen

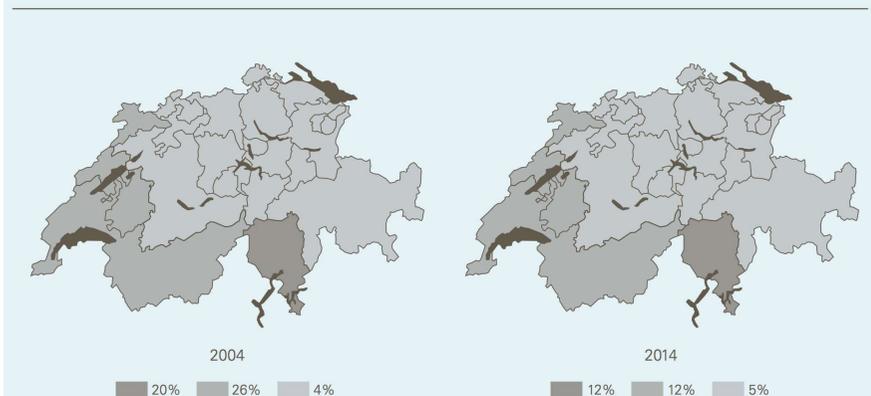




Cultural influences

MRSA in Switzerland

Figure T 7. b. 1: Proportion of methicillin-resistant *S. aureus* (MRSA) among *S. aureus* isolates by linguistic region (German-, French-, and Italian-speaking).



References

- [1] N. Buetti, J. Marschall, A. Atkinson, A. Kronenberg and the Swiss Centre for Antibiotic Resistance (ANRESIS). National Bloodstream Infection Surveillance in Switzerland 2008–2014: Different Patterns and Trends for University and Community Hospitals. *Infect Control Hosp Epidemiol* 2016; 1–8
- [2] F. Olearo, W. Albrich, S. Harbarth, A. Kronenberg and the Swiss Centre for Antibiotic resistance (ANRESIS). *Staphylococcus aureus* and methicillin resistance in Switzerland: regional differences and trends from 2004–2014. *Swiss Medical Weekly*. In press

**Journal of
Antimicrobial
Chemotherapy**

J Antimicrob Chemother 2014; **69**: 1142–1144
doi:10.1093/jac/dkt461 Advance Access publication 13 November 2013

Prolonged perioperative surgical prophylaxis within European hospitals: an exercise in uncertainty avoidance?

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Received 28 August 2013; returned 19 September 2013; revised 11 October 2013; accepted 25 October 2013

Objectives: Socio-cultural factors have been hypothesized to be important drivers for inappropriate antibiotic prescribing in ambulatory care. This study sought to assess any potential role in perioperative surgical prophylaxis (PAP) administered for >24 h (PAP > 24). Within hospitals, PAP continues to be administered for longer than 24 h, despite unequivocal evidence of ineffectiveness beyond this period. A recently published European Centre for Disease Prevention and Control (ECDC) point prevalence survey (PPS) has reported that in 70% of participating countries, PAP > 24 was administered in more than half of the surgical operations surveyed.

Methods: Correlation and simple linear regression modelling was performed using the PAP > 24 proportions for the countries in the ECDC PPS report and the respective scores for the cultural construct of uncertainty avoidance (UA), as detailed by Hofstede.

Results: Pearson correlation analysis produced a moderately strong coefficient (*r*) of 0.50 (95% CI 0.16–0.74; *P* = 0.007). Simple regression yielded a model of PAP > 24 = 29.87 + 0.40UA (*R*² = 0.25; *P* = 0.007).

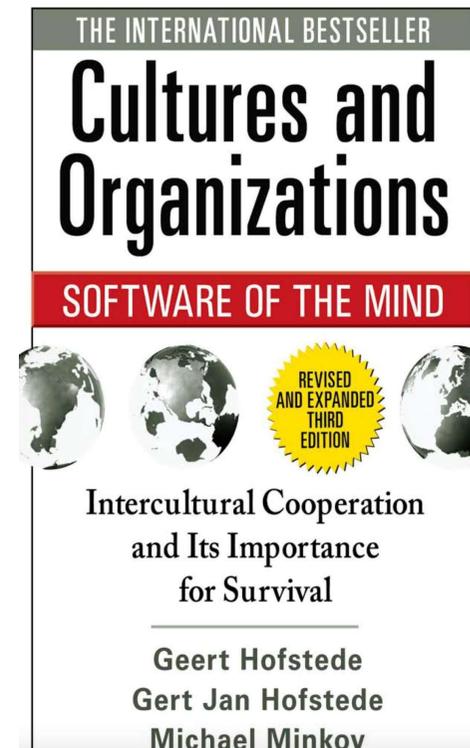
Conclusions: Cultural factors, namely UA, appear to be an important driver for PAP > 24. Any strategy aimed at improving prolonged PAP should be informed by clear knowledge of local socio-cultural barriers, so as to achieve the most successful intervention possible.

...noch 15 Minuten...

- Herausforderungen
- Verborgene Ursachen
- Über Grenzen hinweg
- Netzwerk-Prävention

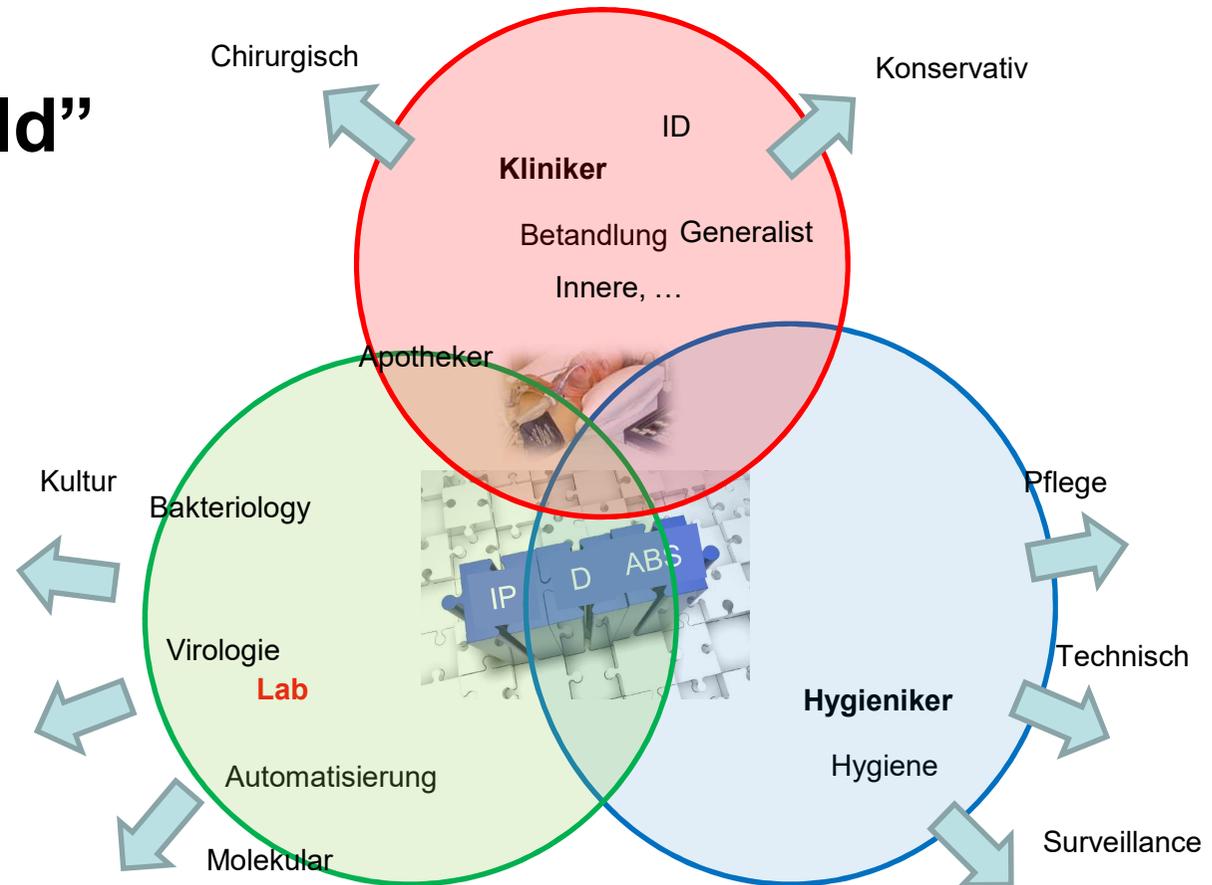
Grenzen sind der gelebte Raum zwischen Systemen

- ...von Ländern
- ...von Berufsgruppen
- ...von Abteilungen
- ...von...



Von Kompetenz...

The “old world” approach



- Kein klares Schutzziel
- Diffuse Interessenslage
- “What’s in for my peers”

...zu Metakompetenz

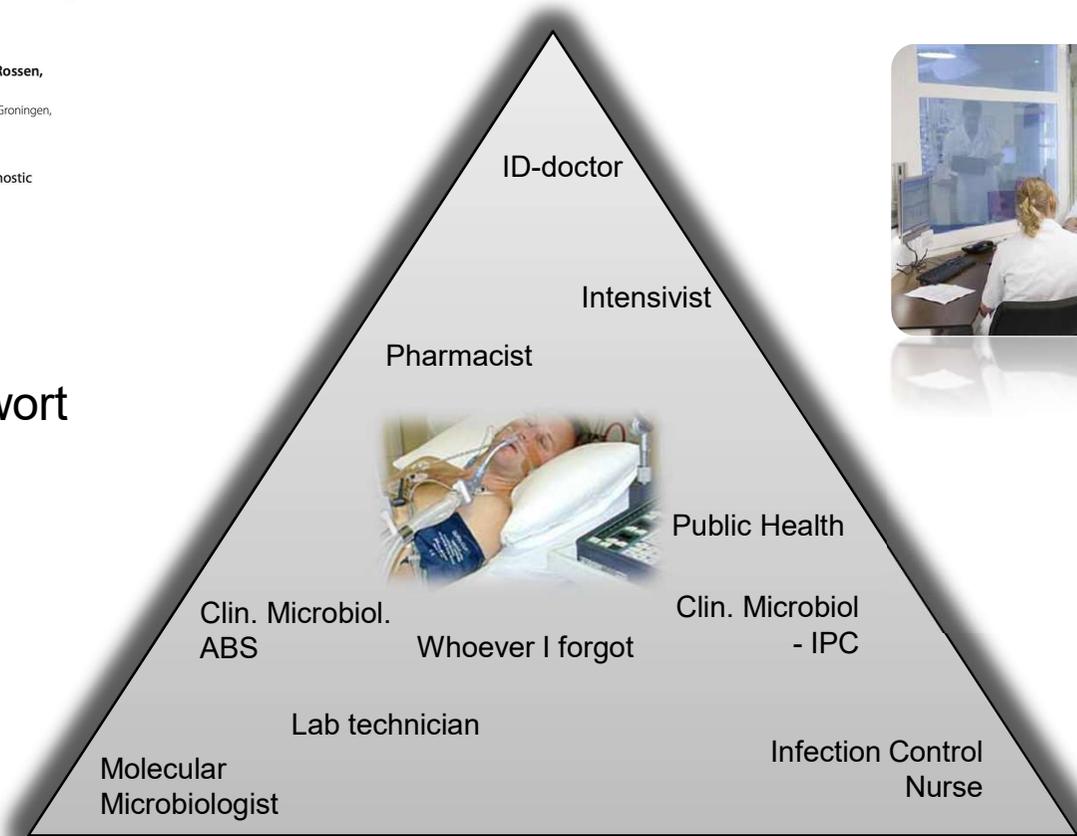
Integrated Stewardship Model Comprising Antimicrobial, Infection Prevention, and Diagnostic Stewardship (AID Stewardship)

© J. H. Dik, R. Poelman, A. W. Friedrich, H. G. M. Niesters, J. W. A. Rossen,
© B. Sinha
Department of Medical Microbiology, University of Groningen, University Medical Center Groningen,
Groningen, the Netherlands

KEYWORDS antimicrobial stewardship, antimicrobial resistance, diagnostic stewardship, integrated stewardship

➤ **Gemeinsame Antwort
auf die 3 Fragen
des Patienten**

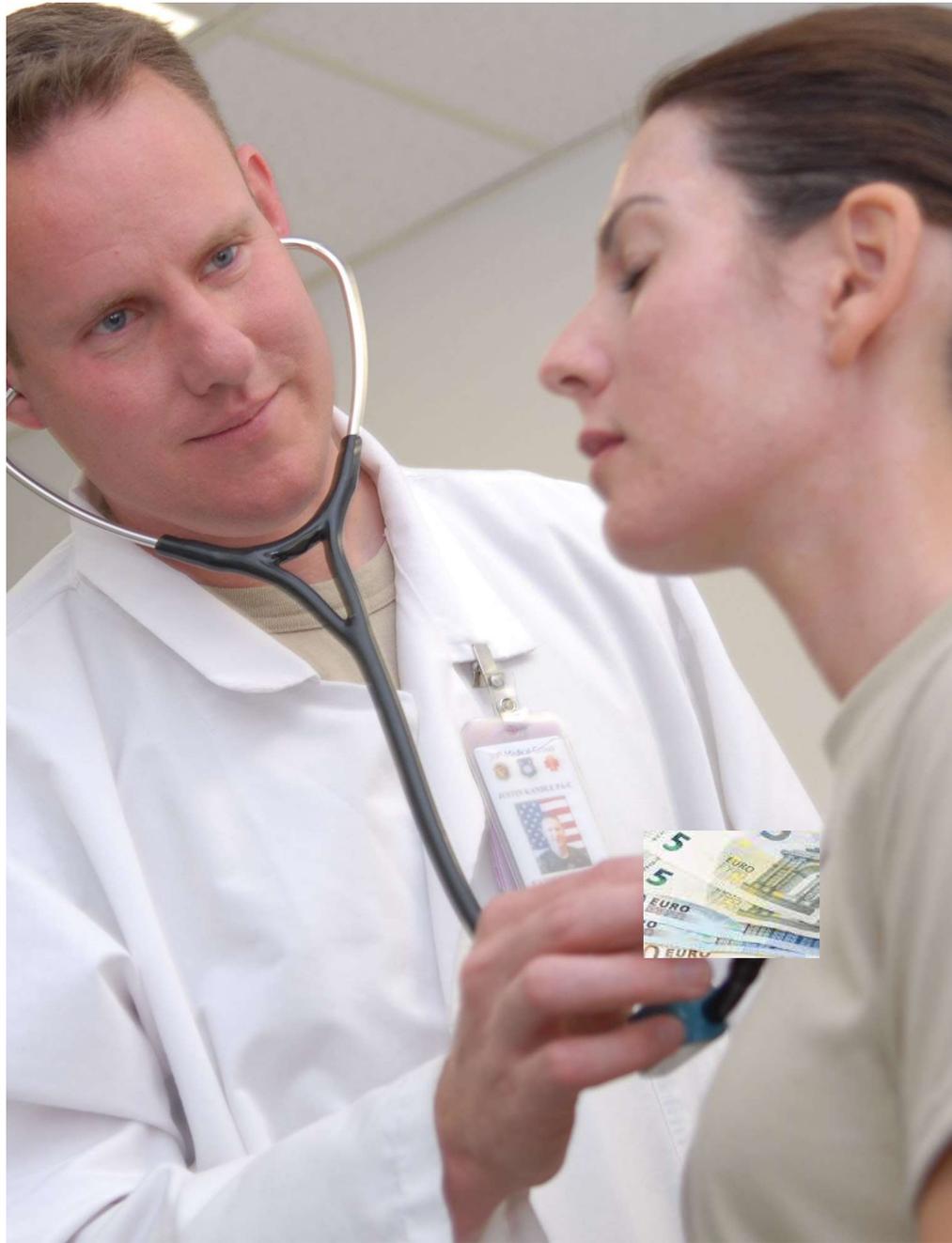
Antimicrobial Stewardship



Courtesy: NVMM.nl

Diagnostic Stewardship

Infection Prevention Stewardship



Vom produktions- zum präventionsökonomischen Modell

- Integriertes Kostenmodell der Diagnostik und Ab-Therapie
- Regionale Präventionsbudgets
- Diagnostic Stewardship (Lab inclusive)
- "Augen für das Unsichtbare" ist Basis für gezielte Prävention



OZI Ostfriesen-Zeitung 15° C
Mittwoch, 16. Mai 2018

Nachrichten Videos Bilder Anzeigen Markt Abo Themen

Übersicht Aus aller Welt Leer Rheiderland Emden Norden Aurich Wiesmoor

Startseite

Leer

1 Leer 15.05.2018

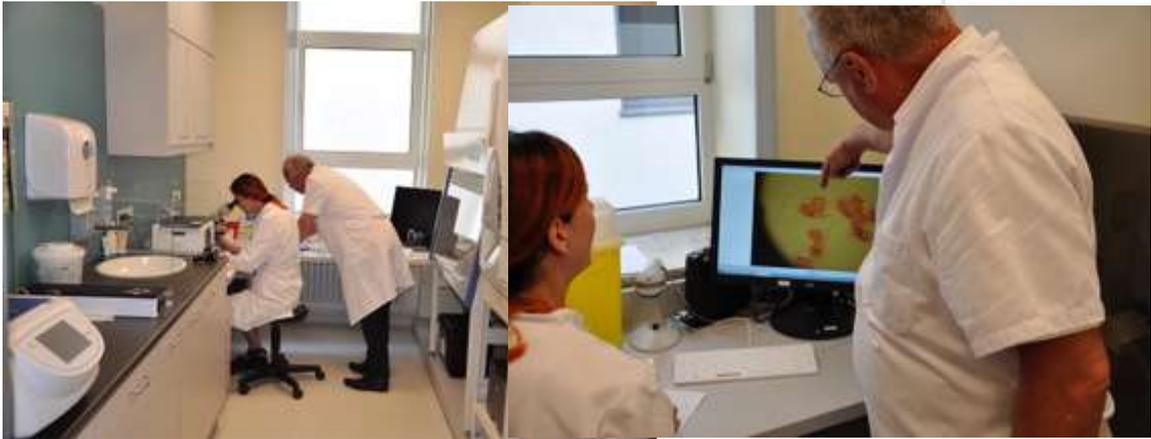
Klinikum will Keime schneller aufspüren

Im neuen Labor können Proben vergrößert und direkt ab fotografiert werden. Bild: Klinikum

VON DENNIS SCHRIMPER

Am Klinikum Leer gibt es nach rund 25 Jahren wieder ein mikrobiologisches Labor. Dieses wird in Zusammenarbeit mit dem Universitätsklinikum Groningen betrieben. Die Vorteile liegen für die Beteiligten auf der Hand.

Leer - Manchmal braucht es eine Weile bis man sein Handeln als „Fehler“ begreift und das Rad zurückdreht: Am Klinikum Leer ist genau...



**Etablierung von
microbiologischem
Diagnostic stewardship
in deutschen Häusern der
Regelversorgung**

“IP-Stewardship”

‘Sprache lernen’

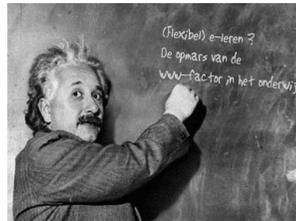
Umsetzung von Hygienemassnahmen

1. Grammatik



Richtlinie

2. Dozenten



KHH, HFK

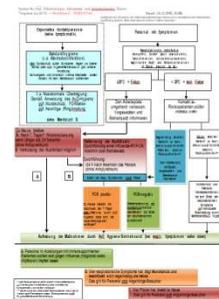
3. Intrinsische Motivation
‘will die Sprache lernen’



Eigenverantwortlichkeit

4. Kann Zeit dafür einplanen

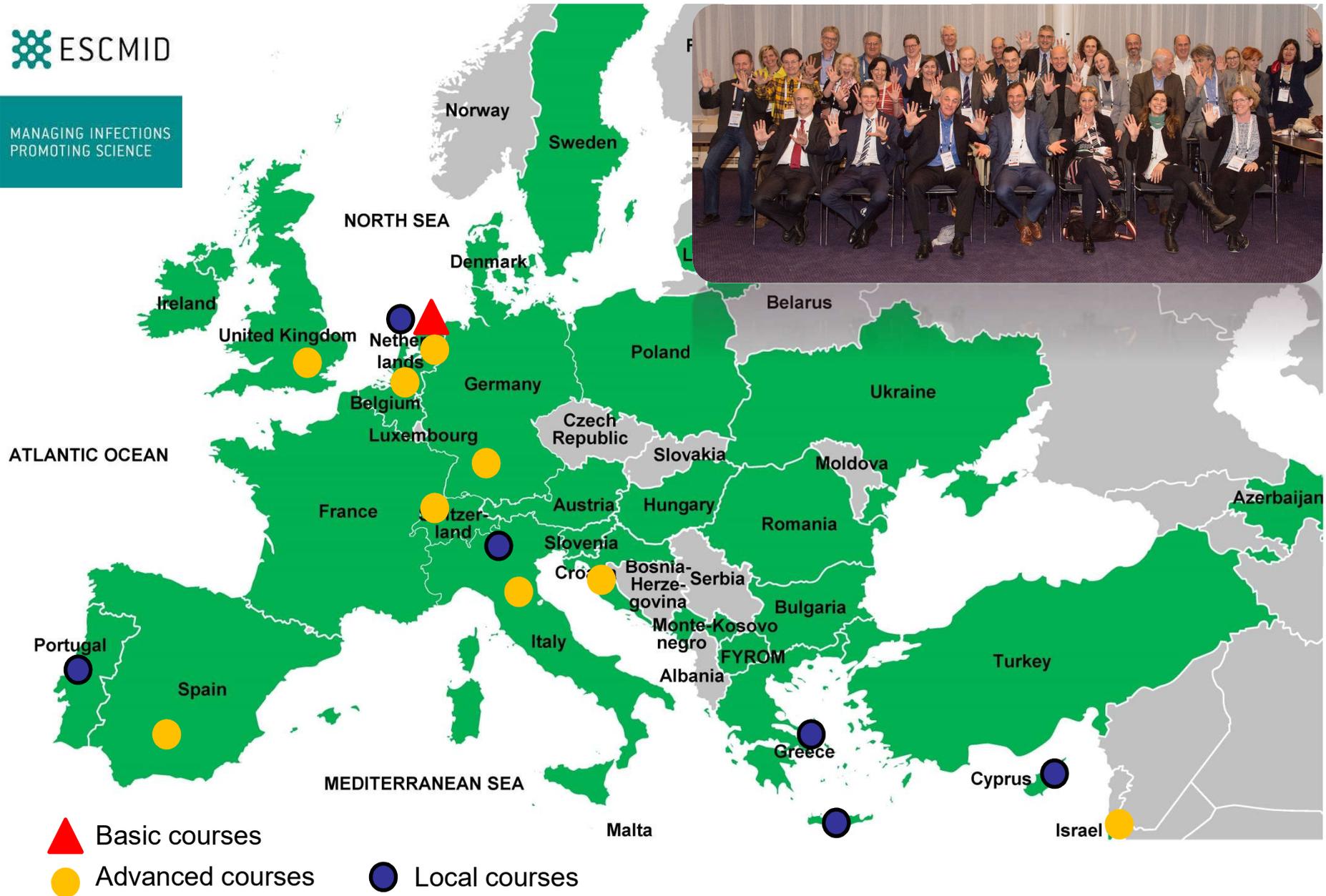
Dedicated Zeit



EUCIC participating countries Courses (2016-2019)



MANAGING INFECTIONS
PROMOTING SCIENCE



Participants

1. The Netherlands
2. Aruba
3. Belgium
4. Germany
5. Italy
6. Spain
7. Greece
8. Ireland
9. Portugal
10. Turkey
11. Austria
12. Norge
13. Lithuania
14. Lituva
15. Slovenia
16. Israel
17. Cyprus

● Faculty

39 Participants
17 countries

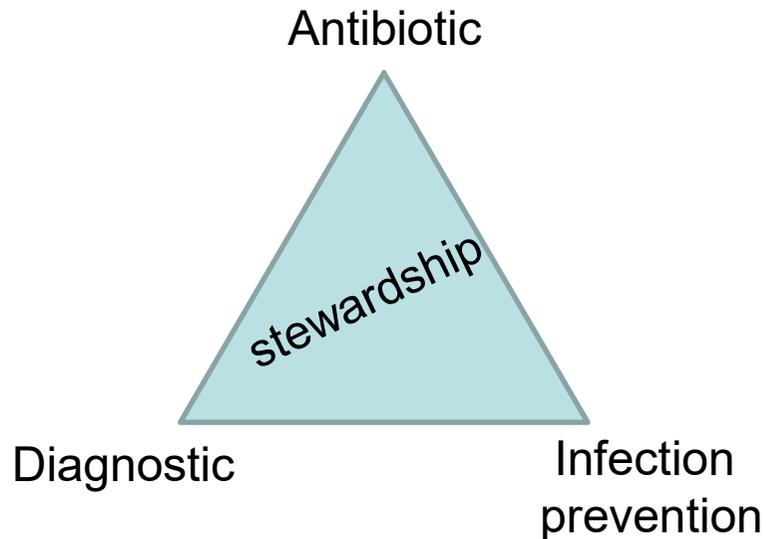
24 Faculty
7 countries

EUNETIPS
European network to promote infection prevention for patient safety



Meta- kompetenz

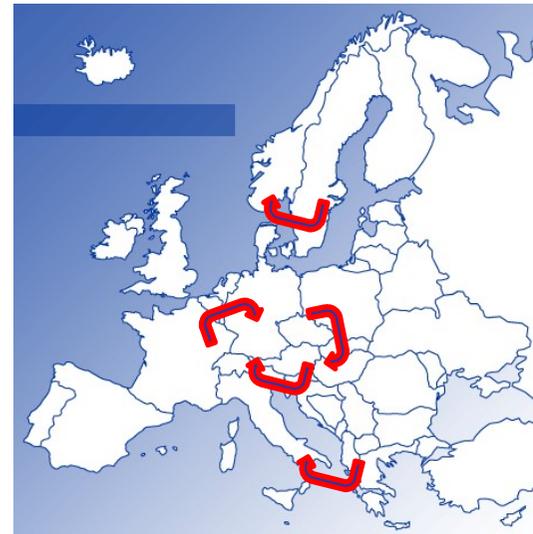
Die Sicht einer Berufsgruppe zu kennen ist gut,
aber reicht nicht aus (Mosaikstein)



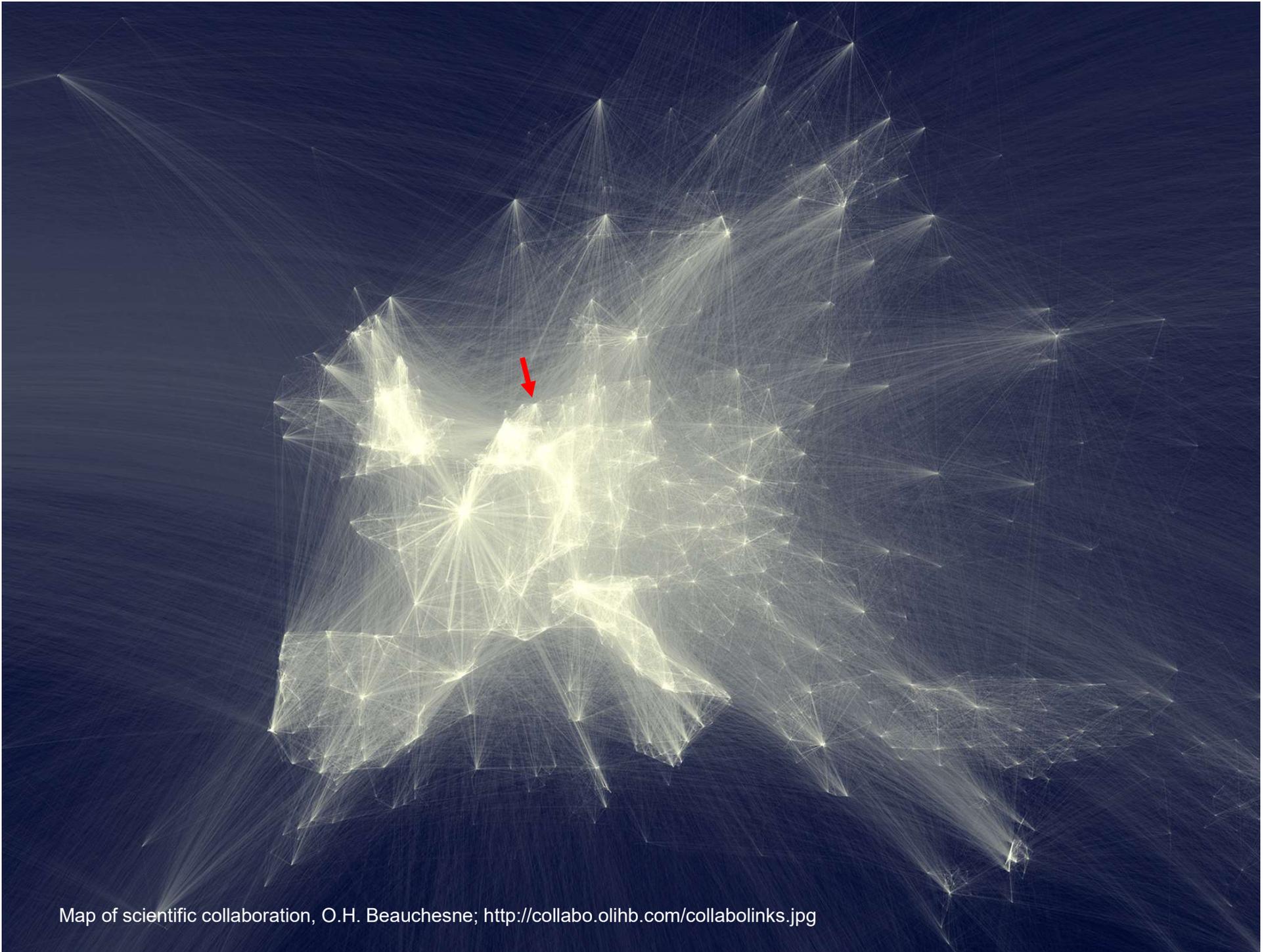
“Jede Berufsgruppe trägt
zu gleichen Teilen bei”

Europäische Kompetenz

Die korrekten Massnahme aus
einem Land zu kennen ist gut,
aber reicht nicht aus



“Jedes Land trägt zu
gleichen Teilen bei”



Map of scientific collaboration, O.H. Beauchesne; <http://collabo.olihb.com/collablinks.jpg>

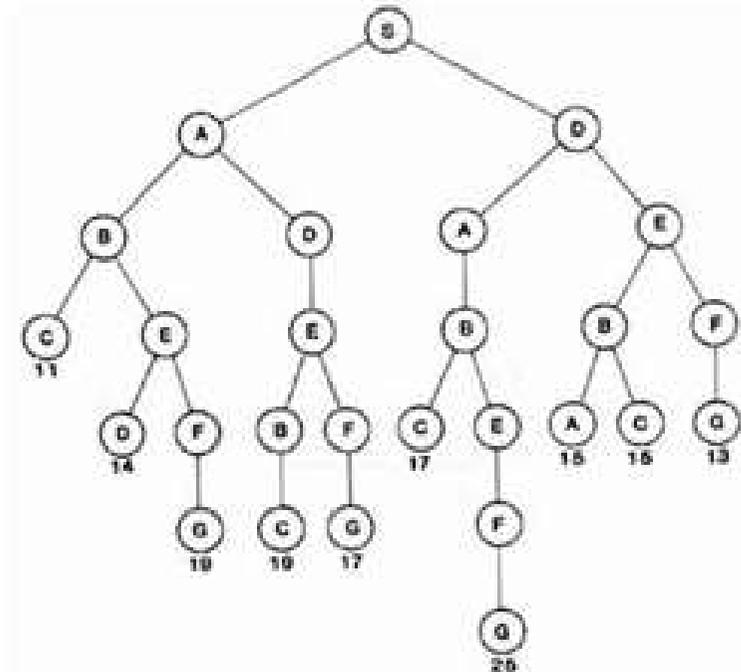
Change needs networks, networks need trust

types of organization



network

Bottom up
Decentralized
Redundant
Long-term goal
Highly adaptive



hierarchy

Top down
Centralized
Easy to control
Short-term goal
Stable, inflexible



Articles

Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study

Prof Linda H Aiken PhD ^a , Douglas M Sloane PhD ^a, Luk Bruyneel MS ^b, Koen Van den Heede PhD ^b, Prof Peter Griffiths PhD ^c, Prof Reinhard Busse MD ^d, Marianna Diomidous PhD ^e, Prof Juha Kinnunen PhD ^f, Prof Maria Kózka PhD ^g, Prof Emmanuel Lesaffre PhD ^h, Matthew D McHugh PhD ^a, M T Moreno-Casbas PhD ⁱ, Prof Anne Marie Rafferty PhD ^j, Rene Schwendimann PhD ^k, Prof P Anne Scott PhD ^l, Prof Carol Tishelman PhD ^m, Theo van Achterberg PhD ⁿ, Prof Walter Sermeus PhD ^b, for the RN4CAST consortium [†]

 [Show more](#)

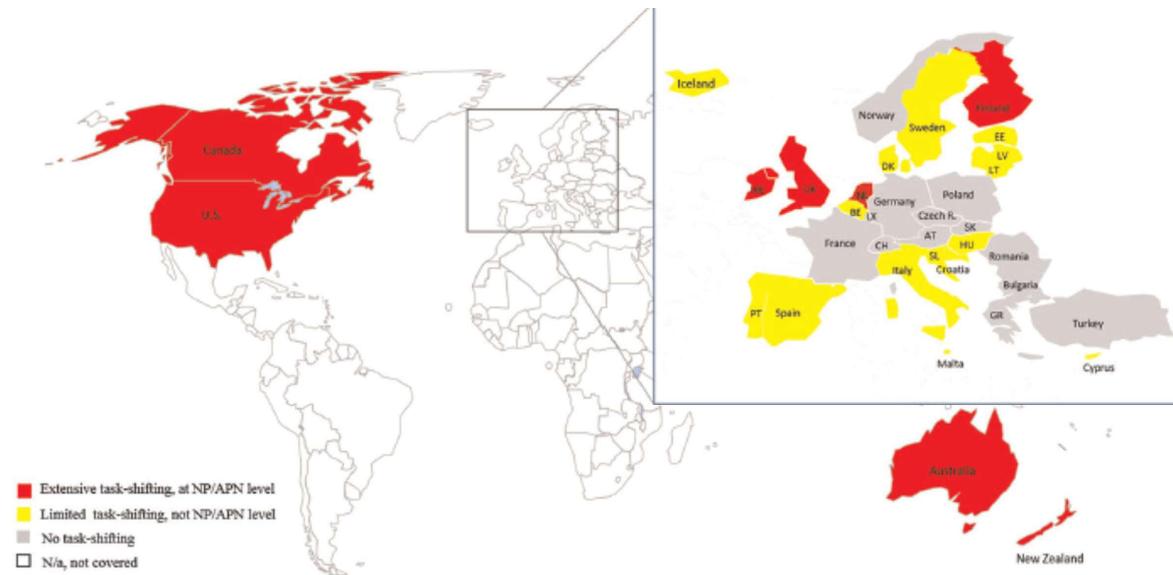
- An increase in a nurses' workload by one patient increased the likelihood of an inpatient dying within 30 days of admission by 7% (odds ratio 1·068, 95% CI 1·031–1·106),
- Every 10% increase in bachelor's degree nurses was associated with a decrease in this likelihood by 7% (0·929, 0·886–0·973).

A Global Perspective on Advance Practice Nurses in Primary Care

New study documents task-shifting across countries

Date: 10 August, 2016

AUTHOR: Janet Weiner, PhD, MPH



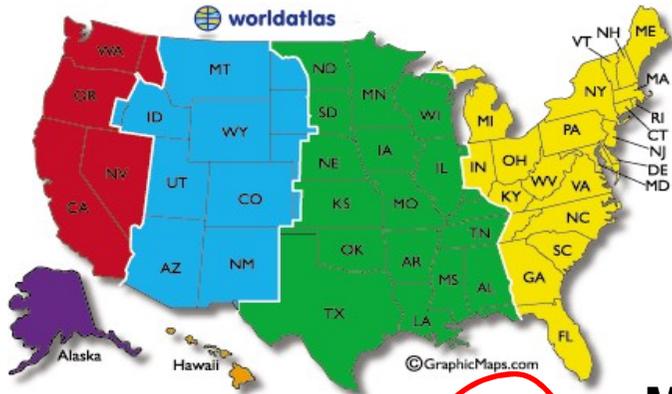
Policy, finance and educational reforms, 2010–2015, and ongoing

Cluster of countries	Pilot/small scale projects	Educational reforms/new programs	Regulatory reforms: nurse prescribing of medicines	Regulatory reforms: other advanced activities	Financing reforms
Extensive task shifting, at NP/APN level		Finland	Australia, Canada, England, Finland, Netherlands, New Zealand, Northern Ireland, Scotland, Wales, USA	Australia, Finland, Ireland, Netherlands, New Zealand, USA	Australia, New Zealand, USA
Limited task shifting, not NP/APN		Cyprus, Iceland, Lithuania, Sweden	Cyprus, Estonia, Spain	Cyprus, Hungary	
No task shifting	France, Germany, Switzerland	Austria, France, Germany, Norway, Switzerland	Poland	France	

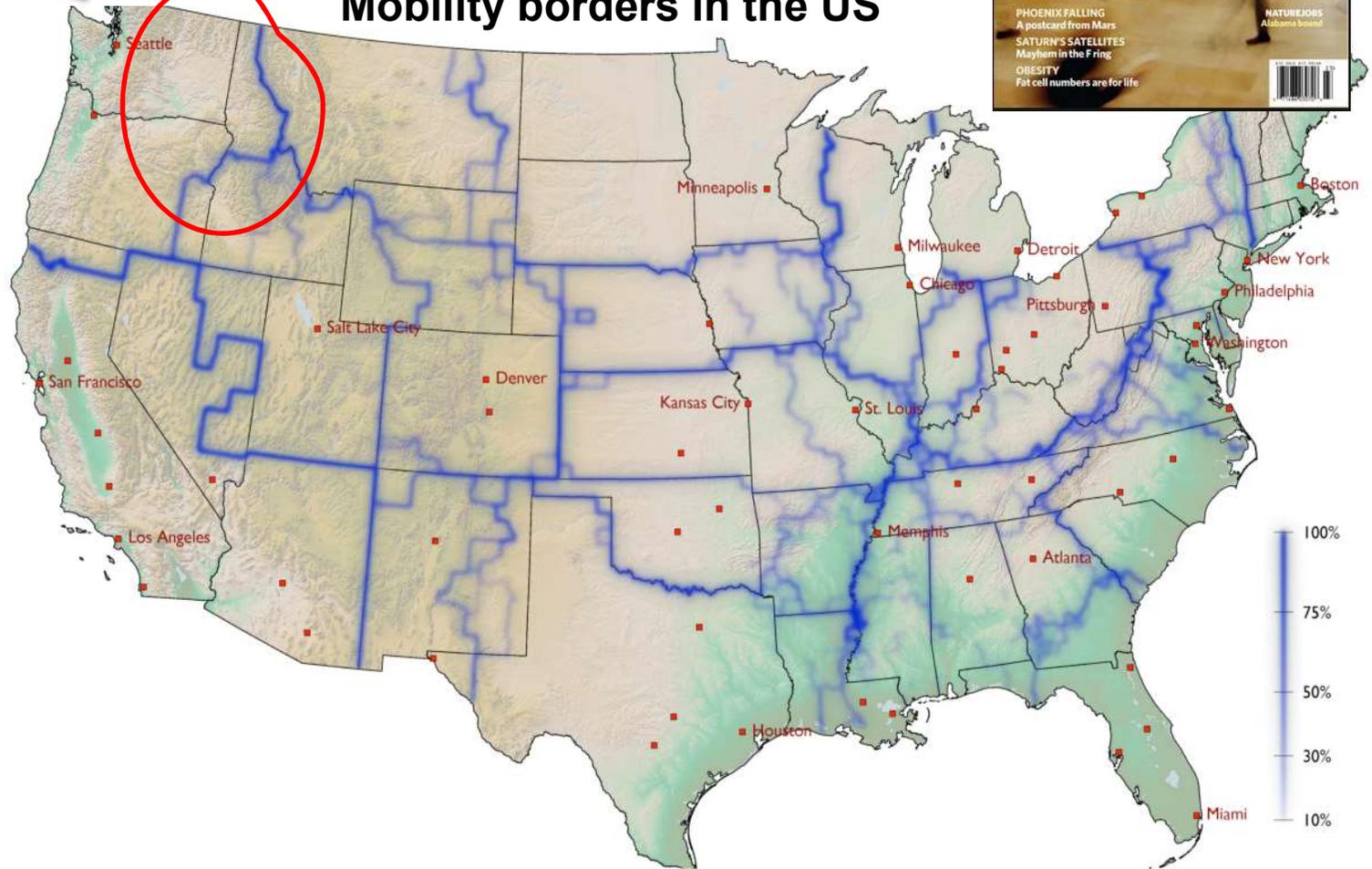
Source: Authors' analysis, TASK-SHIFT2Nurses Survey 2015

...die letzten 10 Minuten...

- Herausforderungen
- Verborgene Ursachen
- Über Grenzen hinweg
- Netzwerk-Prävention



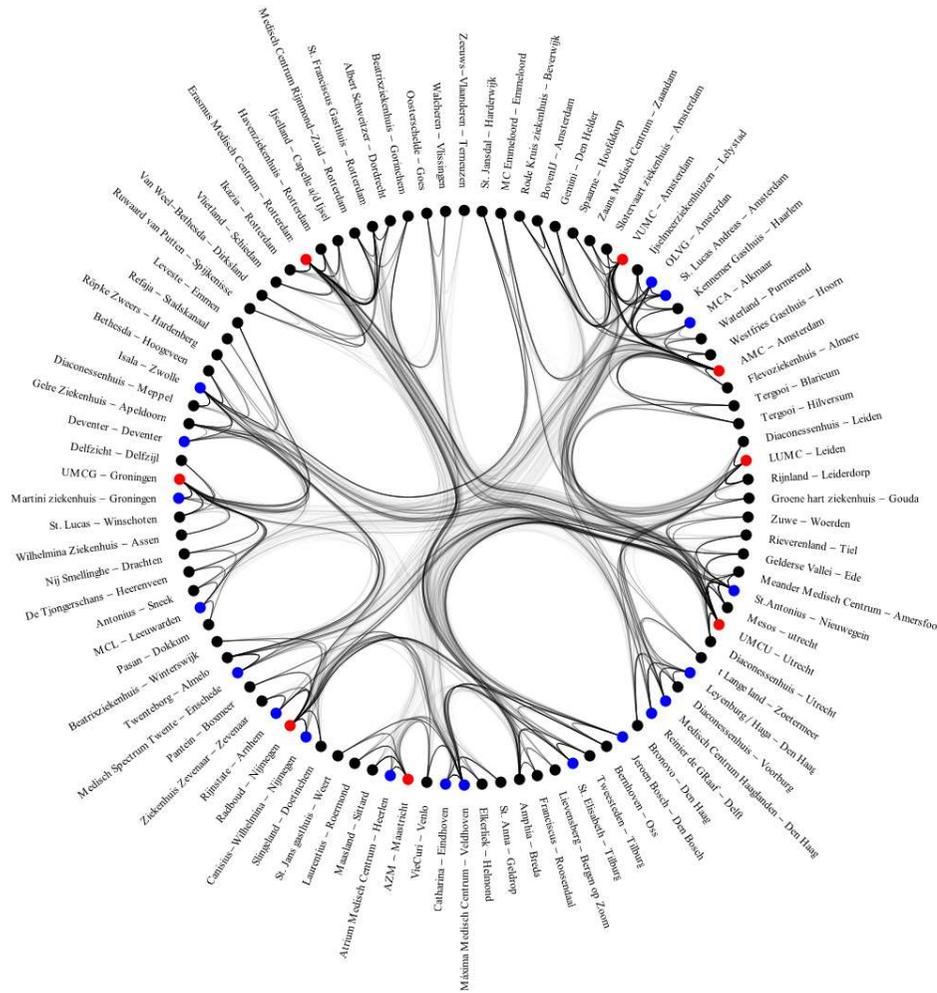
Mobility borders in the US



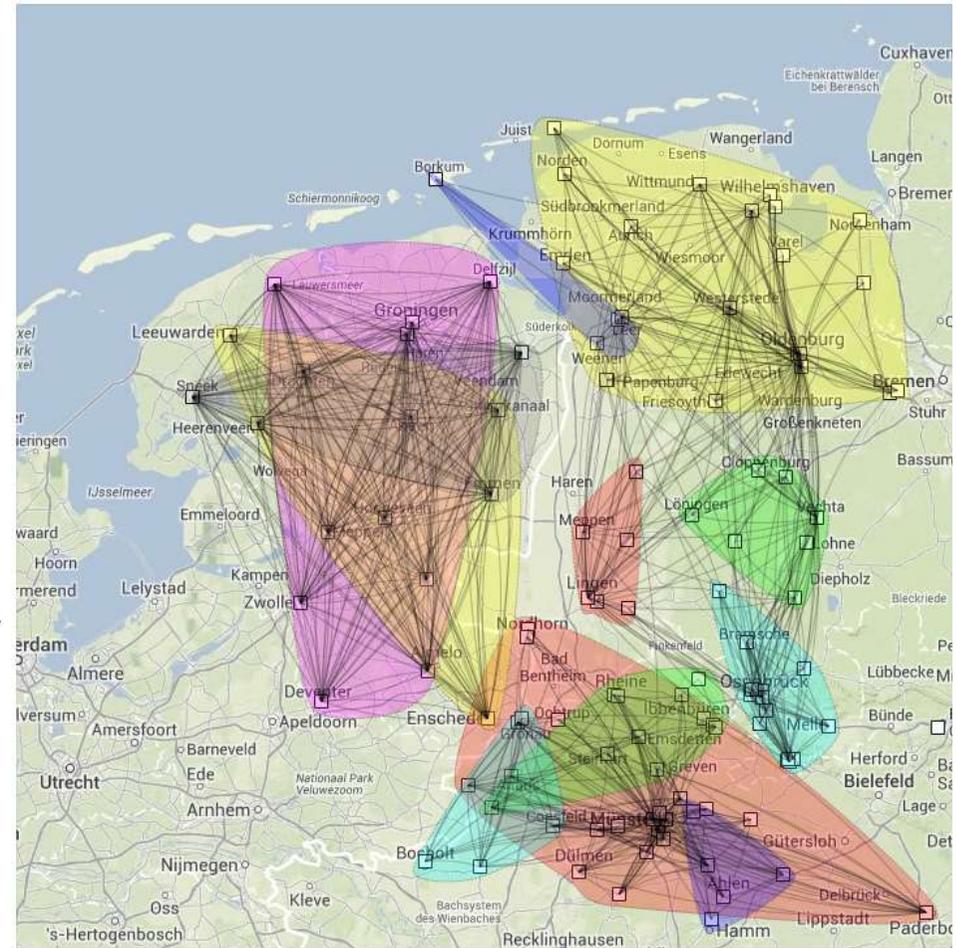
Courtesy: Dirk Brockmann, RKI

Successful prevention needs a look at the real world

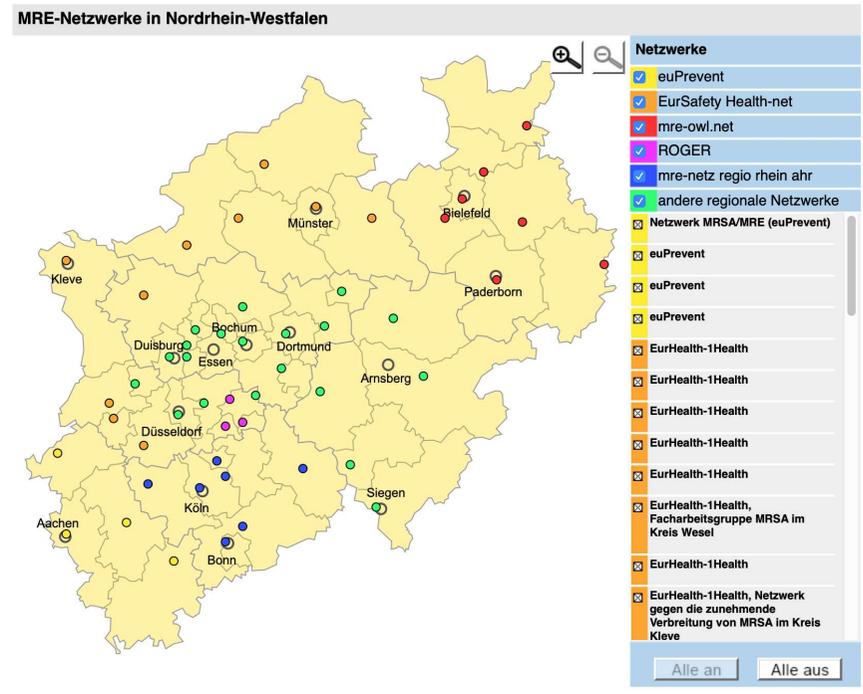
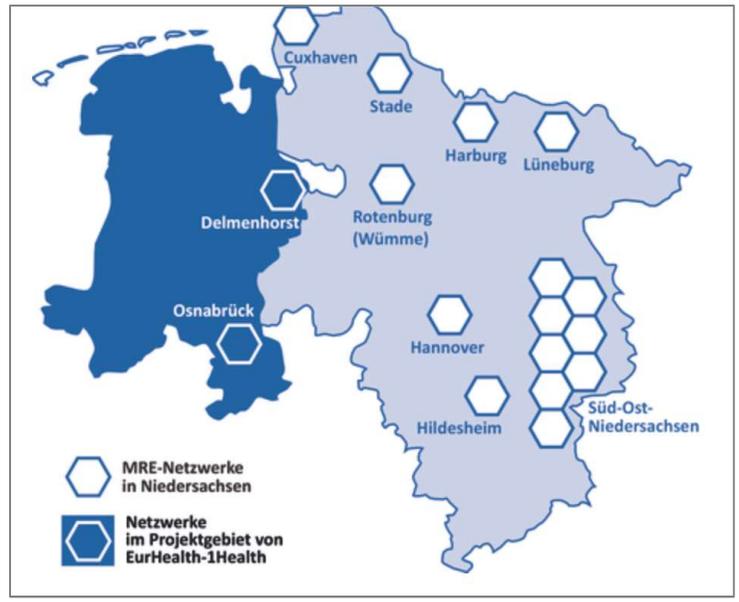
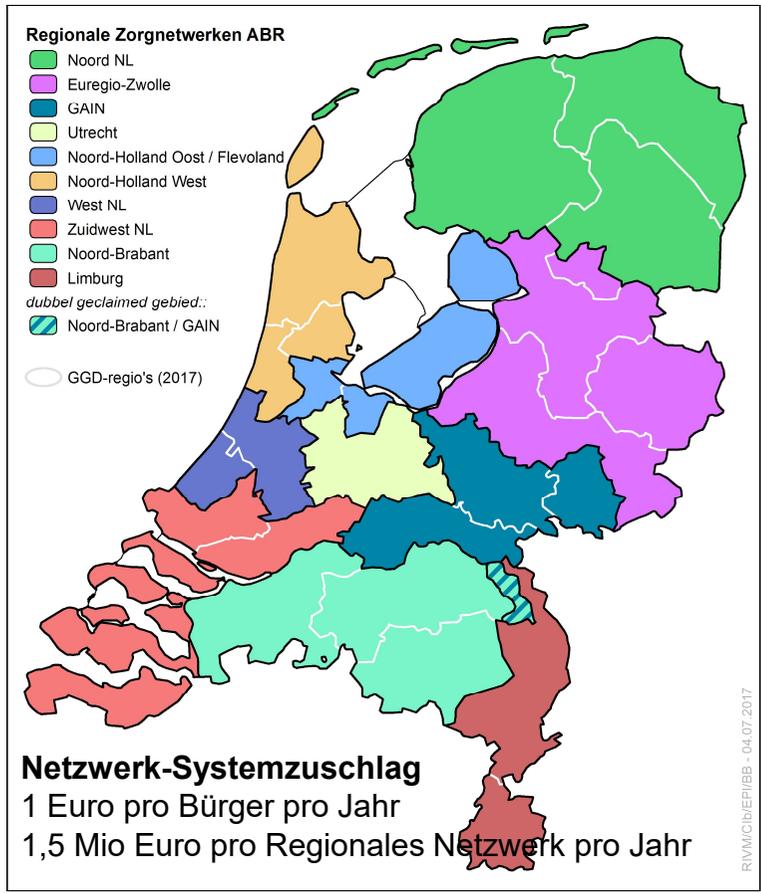
Healthcare network map (NL)



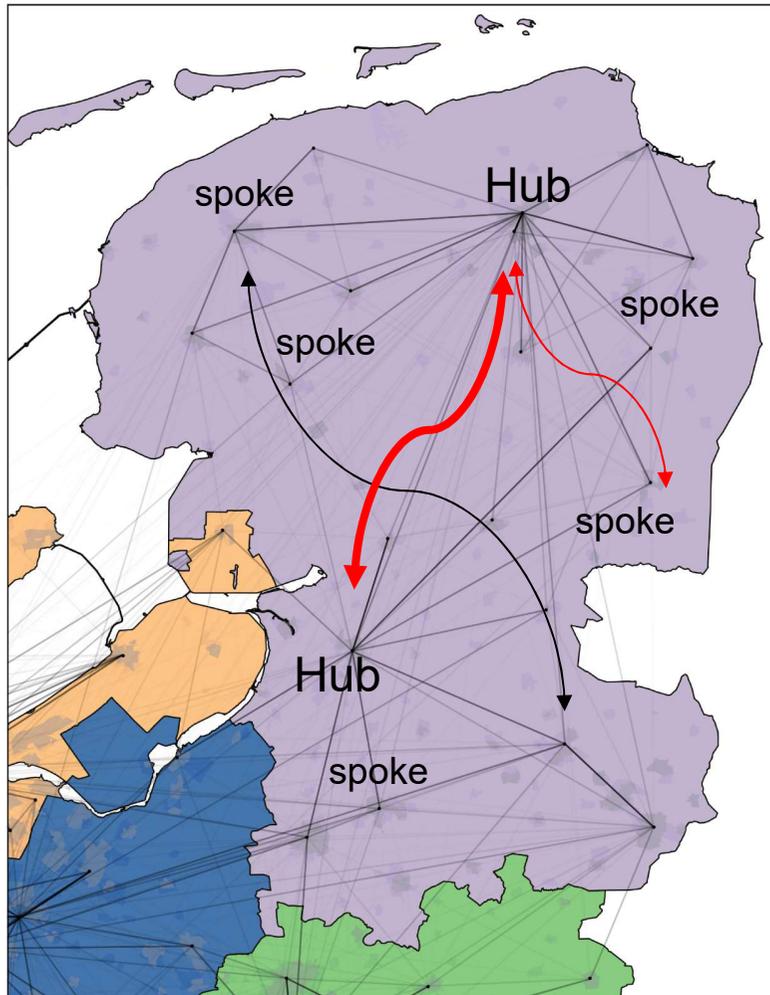
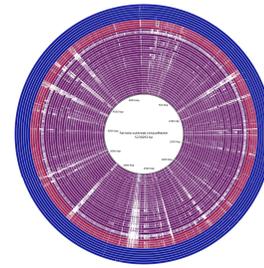
Healthcare network map (Euregio)



Netzwerk-Intervention



Hub&Spoke Intervention



Spokes

- Screening und adaptierte Diagnostik
- “Swarm-Diagnostik”

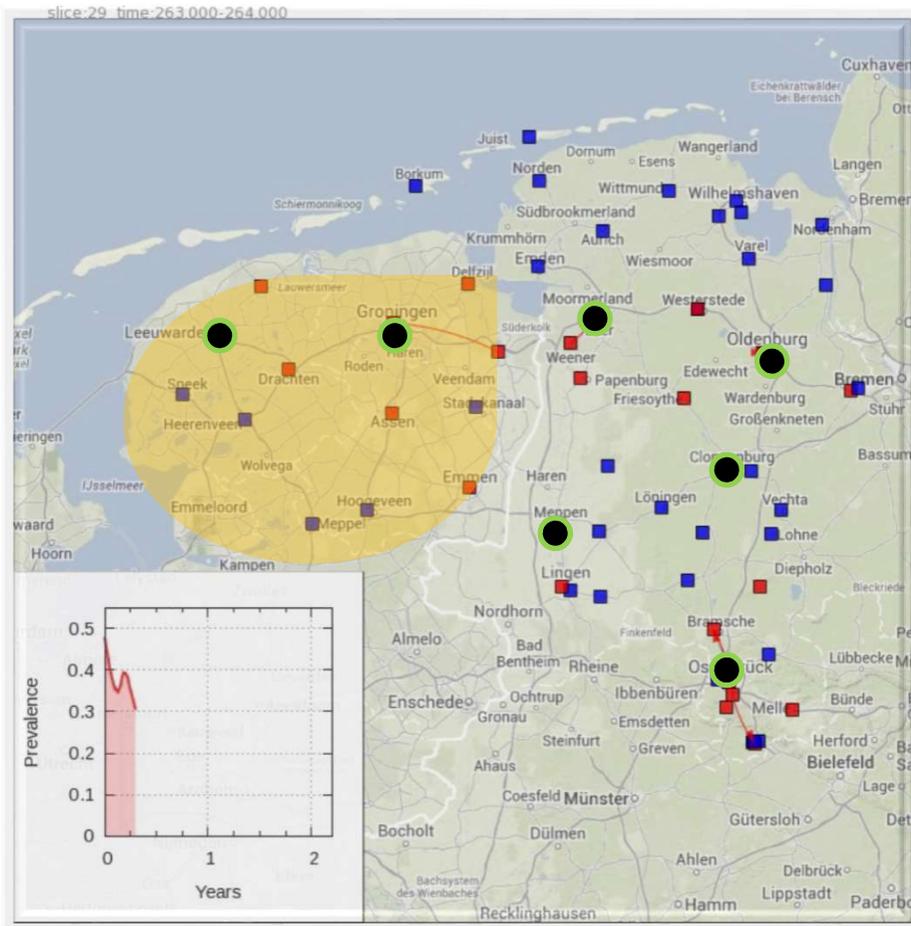
Hubs

- Tailor-made Ausbruch-spezifische Primer
- Regional sharing der Primer

- Keine Konkurrenzsituation innerhalb der Region
- Netzwerkorganisation (bottom up)
- Rapid, responsive, relevant
- Regionales Budget: 1 Euro/Einwohner/Jahr

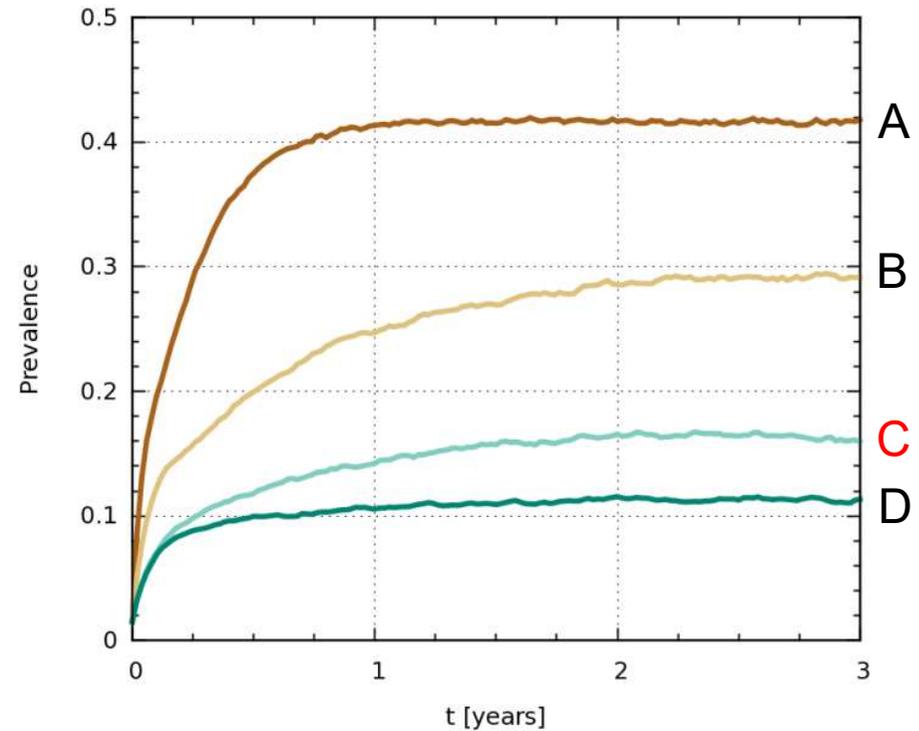
Hub&Spoke-Intervention in der Euregio

- hub-hospital
- ■ spoke-hospital



Effect on outbreak dynamic

- [A] No reduction —
- [B] All hospitals, 50% reduction —
- [C] 5+5 most central hospitals, 80% reduction —
- [D] Combined strategy [A]+[B] —



“CRE-free Europe” starts in each of the 275 healthcare regions



The tipping point

- ❑ Regionale Realität
- ❑ System-abhängige Faktoren sehen
- ❑ Hygiene = Netzwerk-Medizin
- ❑ Metakompetenz





Hartelijk dank!