



Culture, Context, and Change: Foundations for Effective IPC Interventions



No conflicts of interest to declare





Infection prevention & control

ITISNOT ROCKET SCIENCE

Environmental cleaning

Hand hygiene

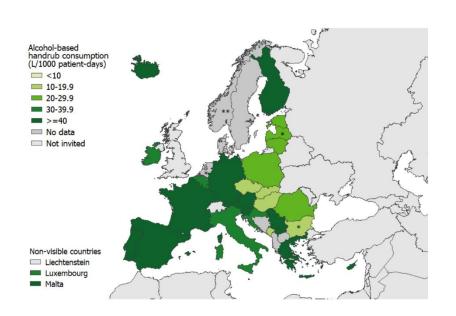
Invasive device care

Standard & transmission precautions



Hand hygiene





Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals

2022-2023

www.ecdc.europa.eu

Table 37. Alcohol-based handrub consumption (litres per 1 000 patient-days) by type of hospital, ECDC PPS 2022–2023

Type of beenitel	No. of	Alcohol-based	per 1 000 patier	ient-days)			
Type of hospital	hospitals	Mean	P10	P25	P50	P75	P90
Primary	299	43.2	11.5	18.6	31.1	54.0	92.3
Secondary	392	45.1	14.1	21.3	34.6	57.4	87.2
Tertiary	259	47.0	17.0	25.5	37.7	60.0	96.5
Specialised	123	43.6	7.8	16.0	33.5	54.4	89.9
Unknown	4	40.5	22.9	28.0	39.8	53.0	59.4
EU/EEA	1 077	44.8	12.9	20.8	34.4	57.0	89.9



Hand hygiene



Median AHR consumption:

• 37.7 L/1000BD

3mL = 1 dose
Assuming one dose per application and additional 25% hand washing:

15 HH performances per patient per day

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Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals

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	Large teaching	hospital	Small community hospital			
HHOs per patient-day	Adult medical-surgical ICU	Adult medical ward	Adult medical-surgical ICU	Adult medical ward		
Shift I total (7:00 AM-6:59 PM)	87.1 (79.8-94.4)	33.3 (30.3-36.3)	39.1 (32.4-45.7)	16.6 (12.7-20.6)		
Shift 2 total (7:00 PM-6:59 AM)	93.5 (81.4-105.5)	40.7 (32.9-48.5)	29.2 (20.1-38.3)	12.7 (9.1-16.2)		
24-hour period total	178.8 (168-189)	71.6 (64.9-78.3)	70.9 (61.0-80.7)	30.3 (24.6-35.9)		



Hospital hand hygiene opportunities: Where and when (HOW2)? The HOW2 Benchmark Study

Median hand hygiene compliance = 25%

- Only one moment
- Typically ²/₃ performed after patient contact



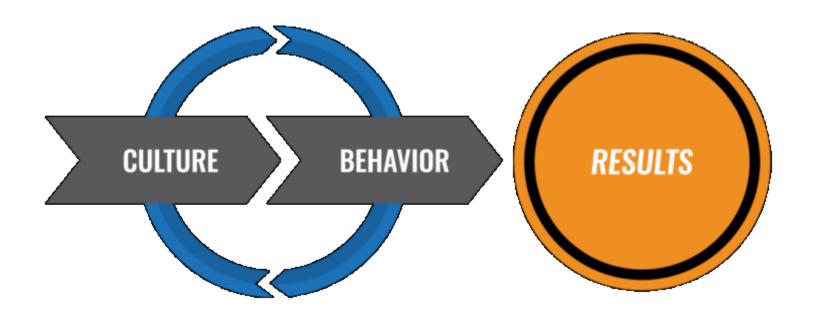


and SCIENCE



Culture drives behaviour







What is culture?



"The way we do things around here!



Culture



Culture always deals with the values of a group

- commonly held standards of what is acceptable or unacceptable, important or unimportant, right or wrong, workable or unworkable, etc.
 - Values which are deemed essential for one group may well be unacceptable in another.

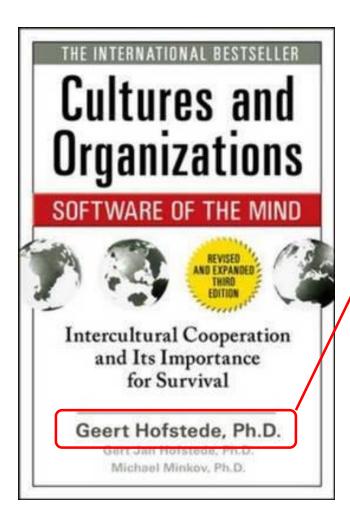
Cultural dimensions

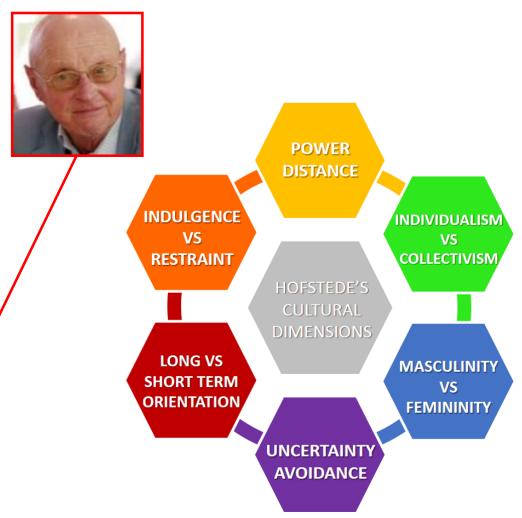
- Constructs of identifiable behavioural manifestations
- Provide a model to understand and compare cultural differences



National cultural dimensions









National cultures



Home > Country comparison tool



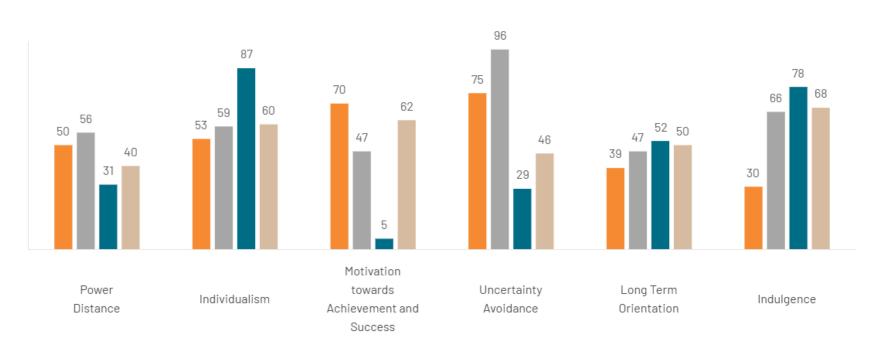
COUNTRY COMPARISON TOOL





Select one or several countries/regions in the menu below to see the values for the 6 dimensions.









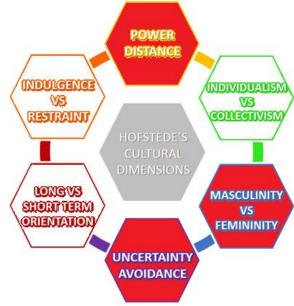
Culture drives antibiotic prescribing in Europe





Cultural determinants arguably best describe variation of antibiotic use between EU countries:

- Levels of antibiotic consumption
- Non-prescribed use
- Use in dubious presentations
 - Esp colds, flu and sore throat
- Emphasis on broad spectrum formulations
- Unnecessarily long duration of surgical prophylaxis





Culture drives IPC behaviour





Understanding the epidemiology of MRSA in Europe: do we need to think outside the box?

M.A. Borg^{a,*}, L. Camilleri^b, B. Waisfisz^c

Cultural dimensions appear to be key factors affecting perceptions and values among healthcare workers, which in turn are critical for compliance and uptake (of infection control)...

MICROBIAL DRUG RESISTANCE Volume 00, Number 00, 2020 © Mary Ann Liebert, Inc. DOI: 10.1089/mdr.2020.0259

> What Is Driving the Epidemiology of Methicillin-Resistant Staphylococcus aureus Infections in Europe?

> > Michael A. Borg^{1,2} and Liberato Camilleri³

... MRSA hyperendemicity is correlated with a set of sociocultural behavioral constructs that typically manifest themselves in lack of urgency to address risk...





What Is Driving the Epidemiology of Methicillin-Resistant Staphylococcus aureus Infections in Europe?

Michael A. Borg^{1,2} and Liberato Camilleri³

Table 3. Generalized Linear Model Relating Methicillin-Resistant Staphylococcus aureus Prevalence in European Union/European Economic Area Countries to Cultural Predictors

Cultural		Univar	riate	Parsimonious		
predictors (scores)	n	Wald χ^2	p	Wald χ^2	p	
Power distance	27	2.055	0.152	7.315	0.007	
Individualism	27	0.198	0.656	_		
Masculinity	27	7.081	0.008	6.483	0.011	
Uncertainty	27	7.101	0.008	21.470	< 0.001	
avoidance						
Long-term orientation	27	0.926	0.336			
Indulgence	27	0.278	0.598	_	_	

^{—,} Factor rejected by parsimonious model.



Uncertainty Avoidance





Tolerance of unpredictability and ability to handle ambiguous situations

Uncertainty avoidance is not risk avoidance

Example: "This patient's intravenous treatment has been stopped."

Risk avoidance:

"He has no further need for the peripheral cannula. Keeping it in place only risks thrombophlebitis & sepsis \rightarrow REMOVE it

Uncertainty avoidance:

"You never know... he may deteriorate and need urgent IV treatment. Having a cannula in situ would be very useful KEEP it for now.... just in case."



Uncertainty avoidance



In countries scoring HIGH for uncertainty avoidance:

- IPC risk assessment may be challenging
 - Risk may be ignored if addressing it causes personal uncertainty or conflict with other priorities.
- Cognitive dissonance is more evident
 - Difficulty to correlate IPC processes and HAI outcomes
- Prefer to take decisions based on anecdotal personal experience
- Management by crisis
 - Issues only addressed when they create a crisis (e.g. outbreak)
 - Bureaucracy and red tape



High uncertainty avoidance cultures



- Compliance with IPC Protocols:
 - Emphasize strict adherence to established rules and protocols "on paper".
 - However, these protocols are not followed if perceived as difficult to implement (create uncertainty) or if they clash with other commitments deemed more important and "certain"
- Reluctance to Change:
 - Change creates uncertainty
 - Resistance to adopting new infection control practices or technologies
 - Initiatives expected to perfect in outcome from the start
- Hierarchy and Authority:
 - Behaviour of leaders is crucial
 - o If senior staff / leaders do not model appropriate behaviors or emphasize the importance of IPC, junior or other staff will not prioritize them



High uncertainty avoidance cultures



Empowerment:

- Staff may reluctant to speak up about breaches in IPC protocols or unsafe practices among colleagues and, more, among seniors out of fear of retribution
 - Lack of a strong culture of safety and accountability regarding infection control.

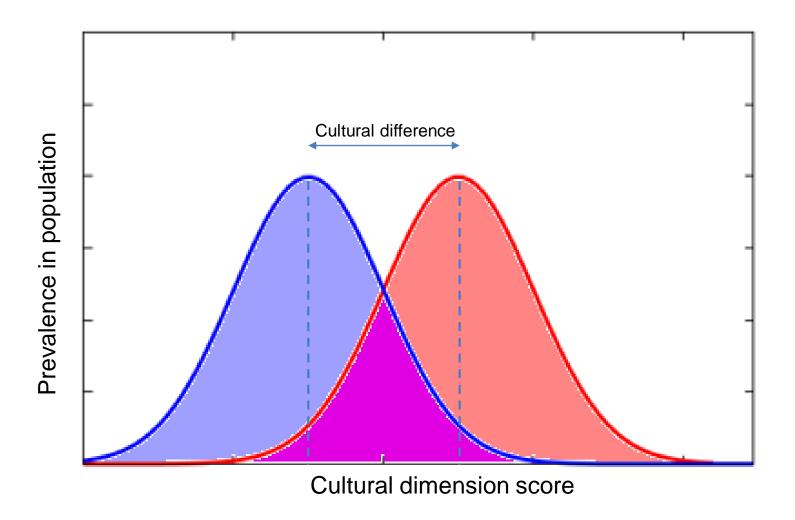
Patient care:

- Pressure to prioritize other aspects of patient care may lead to shortcuts in infection control practices.
 - Sub-optimal hand hygiene or proper cleaning procedures, especially when faced with high patient loads or alternative demands.



Not stereotyping...





There are no "good" or "bad" cultures...just different



Power distance





Hierarchy, hierarchy, hierarchy....

In HIGH power distance countries:

- Power holders
 - Make all the important decisions unilaterally
 - Do not regard consultation as required or, in many cases, useful
 - Lack of accountability
 - Rules do not apply to them...
- Less powerful members
 - Unwilling to contradict or correct power holders
 - Defer decision making as well as ownership and responsibility for outcomes

Teamwork and collegial collaboration (essential for IPC) is likely to be challenging.



Power distance





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High power distance cultures



Authority and Compliance:

 Less likely to question directives from authority figures. If leaders do not prioritize or model good practices, this may result in complacency or non-compliance.

Communication Barriers:

 Lower-ranking staff feel uncomfortable voicing concerns or suggesting improvements, root causes of HAIs will be missed and peer improvement.

Training and Education:

 IPC training often relies more on top-down instruction, leading to a lack of engagement or understanding among frontline staff.

Resource Allocation:

- Decisions about resources for IPC centralized, potentially leading to inequities in access to necessary supplies and training.
- Lower-level staff might not have a say in what resources they need most.

Cultural Norms:

- Hierarchy stifles teamwork and collaboration especially with lack of accountability for authority figures.
 - Hinders a collective approach to infection control.

Response to Outbreaks:

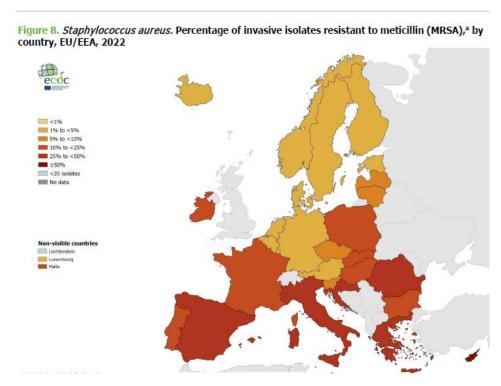
- Responses to outbreaks centralized and less adaptable.
 - Slow down the implementation of necessary changes or adaptations in response to new challenges.

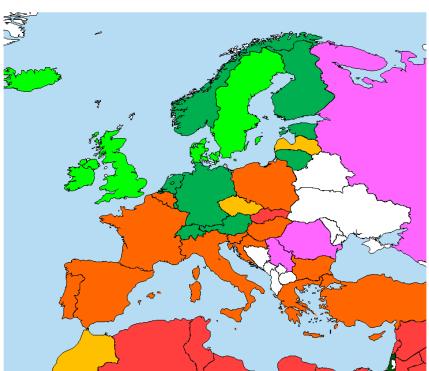


Culture map of Europe



Power distance	+	+	+	++	++	++	+++	+++	+++	No data
Uncertainty avoidance	+	++	+++	+	++	+++	+	++	+++	No data







Masculinity





Level of competitiveness and ambition within a society.

- Masculine cultures:
 - Value assertiveness and material success
 - All about outcomes and objectives
 - Heavy emphasis on targets and benchmarking
- Feminine cultures value good relationships and cooperation.



High masculinity cultures



Emphasis on Competition:

- Prioritize performance and outcomes over collaborative approaches.
- This could lead to a focus on individual goals rather than teamwork.
- If the priority procedures are not related (e.g. waiting times), IPC will be ignored

Risk-Taking Behavior:

 Tendency toward risk-taking, which could affect adherence to IPC protocols.

Workplace Dynamics:

- Can lead to power struggles among staff.
- May detract from a unified approach to infection control and hinder effective collaboration.





What Is Driving the Epidemiology of Methicillin-Resistant Staphylococcus aureus Infections in Europe?

Michael A. Borg^{1,2} and Liberato Camilleri³

Table 4. Generalized Linear Model Relating Methicillin-Resistant Staphylococcus aureus Prevalence in European Union/European Economic Area Countries to Governance Predictors

Governance		Univariate		Parsimonious		
predictors (scores)	n	Wald χ^2	p	Wald χ^2	p	
Accountability	28	3.160	0.075	_		
Stability	28	2.382	0.123		_	
Effectiveness	28	0.036	0.850			
Regulatory	28	2.048	0.152			
Rule of law	28	1.171	0.279			
Control of corruption	28	7.763	0.005	18.450	< 0.001	

—, Factor rejected by parsimonious model.







RESEARCH ARTICLE

Antimicrobial Resistance: The Major Contribution of Poor Governance and Corruption to This Growing Problem

Peter Collignon^{1,2}*, Prema-chandra Athukorala^{3,4}, Sanjaya Senanayake^{5,6}, Fahad Khan³

1 ACT Pathology, Canberra Hospital, Australian National University, Garran, Australia, 2 Canberra Clinical School, Australian National University, Garran, Australia, 3 Amdt-Corden Department of Economics, Australian National University, Acton, Australia, 4 School of Environment and Development, University of Manchester, England, 5 Australian National University, Garran, Australia, 6 Canberra Hospital,

Health Policy 121 (2017) 250-256



Contents lists available at ScienceDirect

Health Policy





Corruption and use of antibiotics in regions of Europe



Björn Rönnerstrand a,c,d,*, Victor Lapuenteb

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- b Quality of Government Institute, Department of Political Science, University of Gothenburg, Box 700, SE 40530, Gothenburg, Sweden
- ^c Centre for Collective Action Research, University of Gothenburg, Sweden
- d Centre for Antibiotic Resistance Reserach, University of Gothenburg, Sweden





What Is Driving the Epidemiology of Methicillin-Resistant Staphylococcus aureus Infections in Europe?

Michael A. Borg^{1,2} and Liberato Camilleri³

"Countries where control of corruption is more lax are characterised by a general tolerance of deviant social norms, which go unchecked and unchallenged by the mainstream.

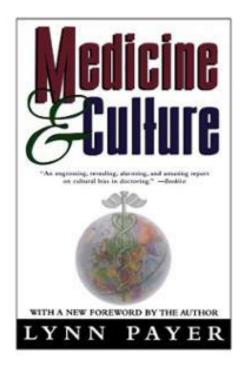
That same **normalisation of deviance** will apply throughout society, including in hospitals and in relation to IPC policies and guidelines aimed at controlling MDROs (e.g. hand hygiene)"



Why bother?



National cultures have developed over millennia and change very slowly



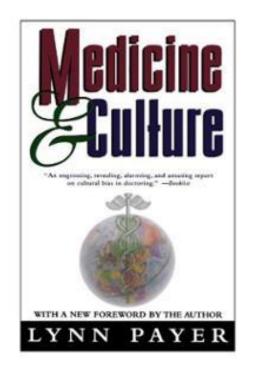
- "Acknowledging the role of culture (should) not become an excuse for fatalism."
- "I do believe you can change things."
- "But I think you can change them more effectively if you know the culture you are against."

Lynn Payer



Changing behaviour





Understanding background culture is vital for any behaviour change intervention

Identify battles you are likely to win





Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin



Review

Patient empowerment and hand hygiene, 1997–2012

M. McGuckin*, J. Govednik







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Journal of Hospital Infection

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Review

Patient empowerment and hand hygiene, 1997–2012

M. McGuckin*, J. Govednik

Cultural theory suggests this would be best compatible with cultures exhibiting:

- High masculinity
 - assertiveness
- Low power distance
 - temerity to address power holders
- Low uncertainty avoidance
 - potentially stressful interaction









Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin



Review

Patient empowerment and hand hygiene, 1997–2012

M. McGuckin*, J. Govednik

Table I

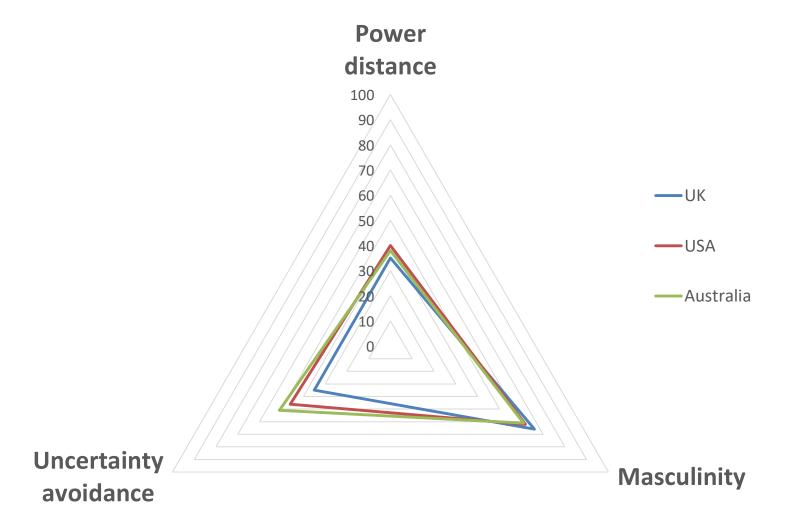
Patient willingness to be empowered, to ask about hand hygiene, and whether they were given permission by their healthcare workers to ask if they have performed hand hygiene. Updated from WHO Guidelines on Hand Hygiene in Health Care (p. 256)

Study origin	Patient believes he/she should be involved	Patient would ask about hand hygiene	Healthcare worker gave permission to patient
England and Wales NPSA (2004) ^a	71%	26%	-
Ontario (Canada) ^D	32%	42%	-
USA consumer survey ^c	-	-	80%
USA web survey ^d	-	60%	-
World Health Organization survey ^e	<u> </u>	52%	86%
UK ^f	79 %	-	-
USA ^g	91%	45%	-
UK ^h	-	-	Significant increase
Switzerland ⁱ	<u>-</u>	33%	81%
Australia ^j	90%	40%	-



Cultural dimensions







WHO global survey of patient experiences in hand hygiene improvement

If the doctor said, please remind me, I would find it quite easy to say, you asked me to remind you to wash your hands...it would be similar to my saying why I was there, or giving the doctor an update on medication, etc...that is, just part of the routine

First it is necessary to change the cultural barriers: patients have

no right to tell the physicians what to do (survey respondent, Slovenia).

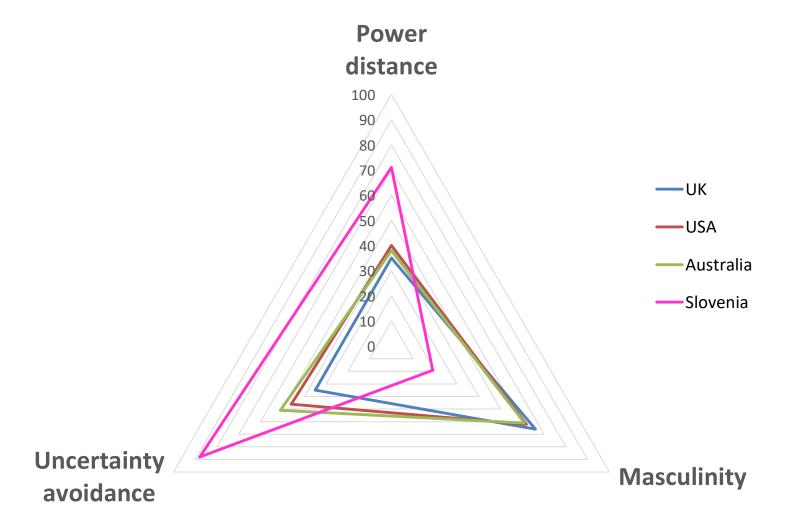
1(0.3%)

1 (1%)



Cultural dimensions

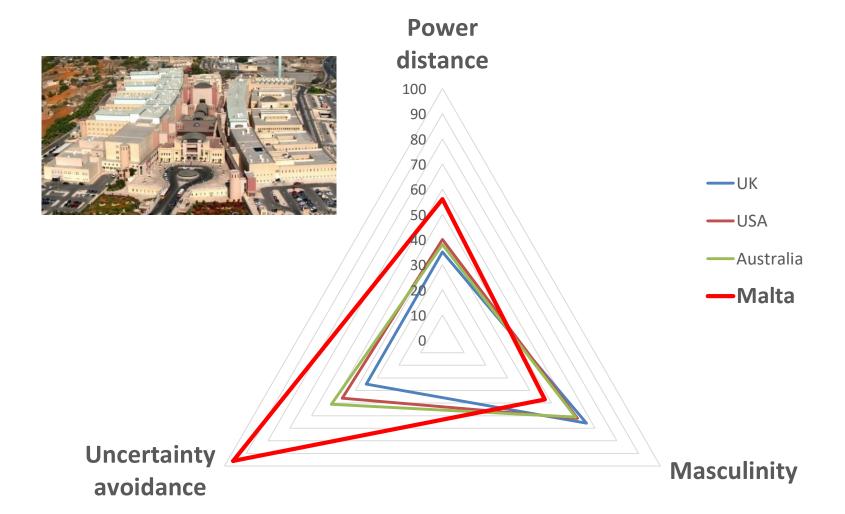






Cultural dimensions





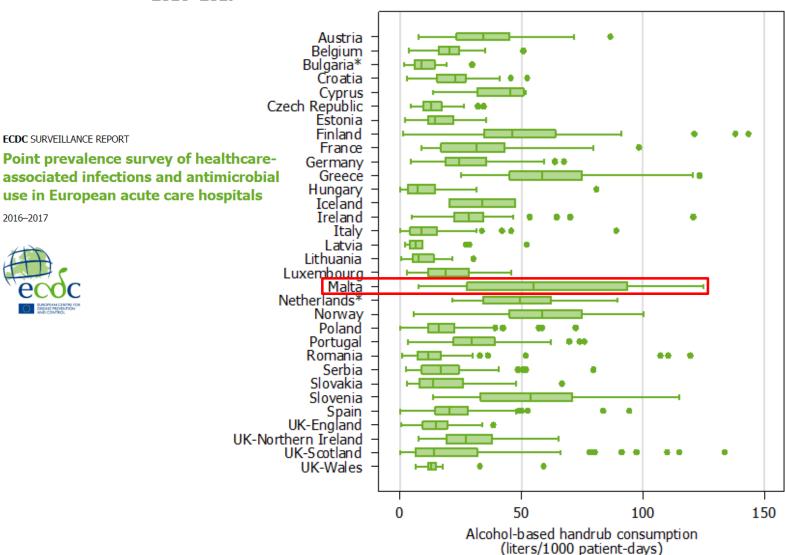


ECDC SURVEILLANCE REPORT

2016-2017



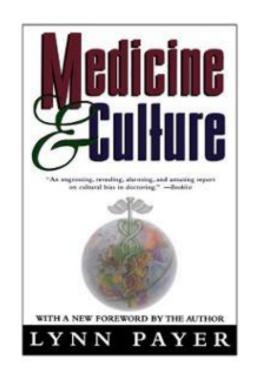
Figure 100 Alcohol-based handrub consumption (litres per 1000 patient-days) by country, ECDC PPS 2016-2017





Changing behaviour





Understanding background culture is vital for any behaviour change intervention

Identify battles you are likely to win

 Design IPC interventions to be compatible with national and organizational culture







Original Article

Preventing healthcare-associated MRSA bacteremia: getting to the root of the problem

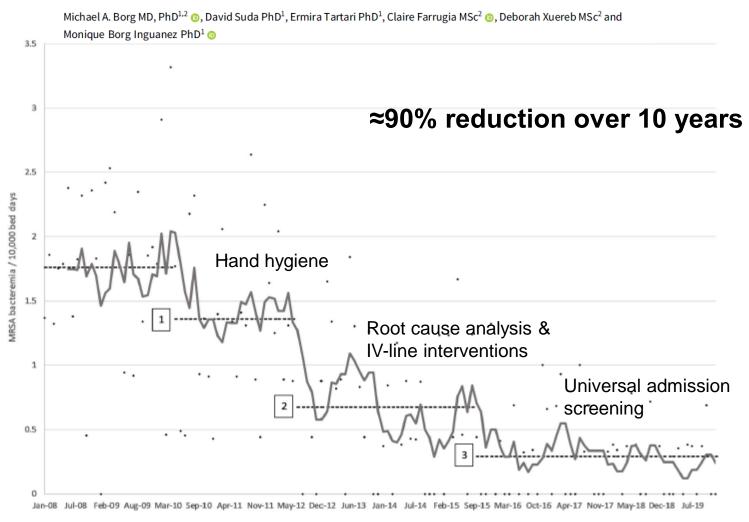


Figure 2. Monthly incidence of MRSA bacteremia/10000BD (dots) with 6-month moving average (gray line) and average mean incidence for baseline and each of the three change points identified (dashed line).



Hand hygiene interventions



- Focus on alcohol hand rub
- Audits, audits, audits....
- Fully centralised from the Infection Control Dept
 - Healthcare assistant employed on ½ FTE only to do audit
 - Feedback given in real time
 - Compliance raised in hospital management meetings
 - Meetings with ward nurse managers
 - In presence of nursing director
 - What can we do to help you improve
 - We anticipate improvement in next six months

INTRODUCE CERTAINTY...





Root Cause Analysis (RCA)



- Systematic, formalized approach to
 - review important adverse events
 - E.g. MRSA bacteraemia, C. diffic
 - identify why they were pering
- Forum for key stakeheders to:
 - focus on the problem
 - come to conserve about factors leading to the problem
 - developing fective corrective actions applicable to the ward or hospital



Driven centrally by IPC team



- Review the case before the RCA
 - identifies key points potentially relevant to the case
- Identifies and invites key stakeholders
 - Doctors and nurses involved in care + relevant others
- Researches and shares applicable standards for care
- Provides a summary of the case at the beginning
- Leads the meeting in a safe, non-punitive environment
- Lets everyone provide input, but keep the focus on the event and related processes.
 - Issues, not individuals
- Takes minutes



At the end of the meeting

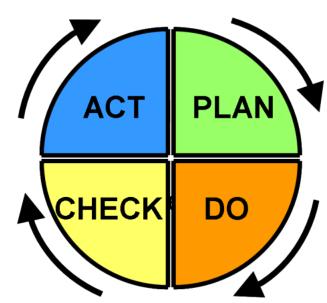


Meeting develops action items, based upon root causes conclusions

Infection Control:

Sends minutes to participants with clear action points and responsibilities

- Copied to senior management
- Reviews implementation of corrective actions
- Raises lack of action management





MRSA admission screening



- Undertaken for <u>all</u> patients admitted to medical, surgical, orthopaedic and intensive care departments
 - No risk assessment made
- Completely centralized
 - Infection control support staff identify new admissions
 - Go to respective wards to swab patients
 - Compliance > 98%
- If reported positive, ICNs phone ward and initiate decolonization

 Journal of Hospital Infection 113 (2021) 77–84
 - Mupirocin nasal ointment
 - Chlorhexidine baths



Universal admission screening: a potential gamechanger in hospitals with high prevalence of MRSA

^b Mater Dei Hospital, Msida, Malta



Contrary to "evidence"



"The few proper randomised trials that have assessed the effectiveness of universal screening have not shown a benefit"

Bonten M, Weinstein RA Lancet Infectious Diseases 2016

NHS Scotland recommendations:

- screening of intensive care & renal admissions +
- high risk surgery (orthopaedics / vascular / cardiothoracic) +
- clinical assessment (past history/hospital admission/wound or device)

Coia et al BMJ 2014

- However, the available studies originated primarily from countries with low colonisation prevalence.
 - "CRA based screening is more cost effective in low prevalence settings, such as the UK."

Cairns et al BMJ2014



Available online at www.sciencedirect.com

Journal of Hospital Infection journal homepage: www.elsevier.com/locate/jhin





Universal admission screening: a potential gamechanger in hospitals with high prevalence of MRSA

M.A. Borg a,b,*, D. Suda a, E. Scicluna b, A. Brincat b, P. Zarb a,b

- "Dysfunctional systems and cultures appear to be critical drivers of MRSA in highly endemic hospitals
- In such environments, effective implementation of a targeted screening policy is unlikely to materialize considering it is dependent on individual risk assessments, undertaken by a multitude of stakeholders institution-wide.
- On the other hand, the simple centralized approach adopted at MDH worked because it eliminated this complex variable.
- Above all, the 'out-of-the-box' approach, which adapted the science to local circumstances and limitations, achieved significant outcomes at a low cost."







Original Article

Preventing healthcare-associated MRSA bacteremia: getting to the root of the problem

Michael A. Borg MD, PhD^{1,2} , David Suda PhD¹, Ermira Tartari PhD¹, Claire Farrugia MSc², Deborah Xuereb MSc² and Monique Borg Inguanez PhD¹

- "...transformational change was achieved by recognizing and understanding organizational and national cultural backgrounds and adapting interventions accordingly.
- This was manifest in the predominantly top-down approach, coupled with regular communication and feedback with front-line staff.
 - heavily centralized approach and extensive day-to-day direct involvement in all aspects of the interventions... (by) the IPC team
 - ..in line with the high uncertainty avoidance and power distance that characterizes Maltese national culture"







Original Article

Preventing healthcare-associated MRSA bacteremia: getting to the root of the problem

Michael A. Borg MD, PhD^{1,2} , David Suda PhD¹, Ermira Tartari PhD¹, Claire Farrugia MSc², Deborah Xuereb MSc² and Monique Borg Inguanez PhD¹

- "Procedures that were part of previously published successful studies were modified because they were deemed to be culturally incompatible and could have undermined the whole project."
 - "Whereas evidence-based literature was used to inform the interventions, the setting where these studies were undertaken was always considered."
 - "... the organizational context and environment of any successful study needed to be comparable to our own before the intervention was introduced"



Conclusions



- Infection Prevention & Control is ultimately all about behaviour change
- Cultural determinants both national & organisational are recognised as key drivers of human behaviour
- IPC professionals need to understand their cultural background in order to implement effective behaviour change interventions to have the best chance of success
 - Identify whether "evidence-based" IPC research from other countries or institutions is compatible
 - Ensure interventions are culturally congruentAvoid "copy & paste" approaches





Thank you



