Global Application of Behaviour Change Models and Infection Control Strategies
Dr. Michael Borg, Mater Dei Hospital, Malta
Sponsored by the World Health Organization Patient Safety Agency

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Dr. Michael A. Borg
Infection Control Dept
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Malta

Sponsored by
WHO Patient Safety Challenge
Clean Care is Safer Care

Hosted by Dr. Hugo Sax
University of Zurich Hospital

www.webbertraining.com November 12, 2014

IPC & human behaviour

- Abundant research on effective IPC interventions
  - We know what works and what we need to do, yet …
- Publications continue to highlight suboptimal compliance
  - Hand hygiene, antibiotic use, device management etc
- Research and knowledge about effective IPC processes are meaningless if we cannot integrate them into day to day activities (behaviour) of HCWs

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Critical Care Medicine 2004; 32:10

Eliminating catheter-related bloodstream infections in the intensive care unit*

Sean M. Berenholtz, MD, MHS; Peter J. Pronovost, MD, PhD; Pamela A. Lipsett, MD; Deborah Hobson, BSN; Karen Earsing, RN, MS; Jason E. Farley, MSN, MPH, CRNP; Shelley Milanovich, RN, MSN, ACNP; Elizabeth Garrett-Mayer, PhD; Bradford D. Winters, MD, PhD; Haya R. Rubin, MD, PhD; Todd Dorman, MD; Trish M. Perl, MD, MSc

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- Empowering nurses to stop the catheter insertion procedure if a violation was observed

Lancet 2000; 356: 1307–12

ARTICLES

Effectiveness of a hospital-wide programme to improve compliance with hand hygiene

Didier Pittet, Stéphane Hugonnet, Stephan Harbarth, Philippe Mourouga, Valérie Sauvan, Sylvie Touveneau, Thomas V Perneger, and members of the Infection Control Programme

Impact on hand hygiene & infection rates

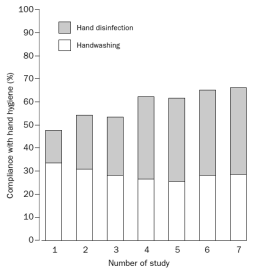

Figure 1: **Hand-hygiene compliance trend during seven consecutive hospital-wide surveys, University of Geneva Hospitals, 1994–97**

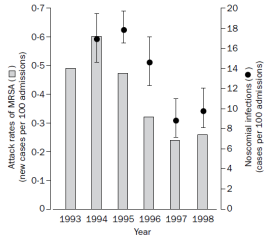

Figure 3: **Trends in prevalence of nosocomial infections and annual attack rate of MRSA, 1993–98, University of Geneva Hospitals**

Hosted by Dr. Hugo Sax, University of Zurich Hospital
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Interventions

- Staff awareness
  - A3-size colour posters
  - Most prominent component
- Greater availability of alcohol hand rub
  - Individual bottles provided
- Clinical support for the programme
  - Extra funding
  - Involvement of senior staff

Behavioural influences

Psycho-social theories:
- Cognitive dissonance
- Cognitive economy
- Unrealistic optimism
- Attribution
- Egocentric behaviour

Human nature

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Cognitive dissonance

- In the most part humans are not rational but they rationalise (Festinger).
- Attempt to appease personal conflict by generating an excuse or justification
- Make consistent two or more things that are exclusive to one another
  - "Why are you on my back about hand hygiene? Why don't you see the problems we have with...."

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Cognitive economy

- Attempt to gain maximum output for minimum effort (Roth & Frisby, 1992)
- Become context specific or tunnel visioned
- Fail to take account of the wider implications of their behaviour
  - "Don't talk to me about resistance! My only concern is the patient in front of me and giving him antibiotics to covering all possible microbes"

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Unrealistic optimism

- Unrealistic optimism of risk behaviour (Ogden 2007)
- Perception that behaviour is of no consequence to others or to themselves
  - "There is no way my 'occasional' lapses in hand hygiene could be responsible for our high MRSA levels."

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Attribution

- Making judgements of other's behaviours based upon minimal and dubious evidence.
  - "Of course this patient got an MRSA bacteraemia. He is diabetic and on dialysis. It was unavoidable!"

12

Egocentric behaviour

- Self-centred and self-oriented behaviour
  - "Do you really expect me to stay writing a reason for prescribing meropenem for every patient? Don't you know I have more important things to do with my time!!!"

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Attitudes

ScienceDirect

The power of vivid experience in hand hygiene compliance

P.W. Nicol*, R.E. Watkins, R.J. Donovan, D. Wynaden, H. Cadwallader

Division of Health Sciences, Curtin University of Technology, Bentley, Western Australia

- Immediacy of outcomes
  - How immediately apparent is the outcome of a mishap
- Direct vivid experience
  - E.g. personal exposure to an outbreak of infection in the hospital or infection in a patient under care
- Desensitisation
  - long-term familiarity without apparent adverse consequences
- Personal sense of responsibility
  - work ethic, morality & emotional involvement

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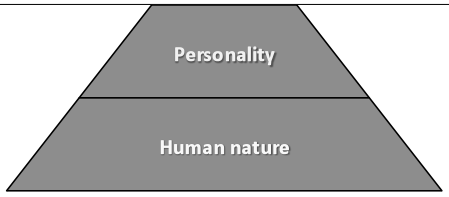
Behavioural influences



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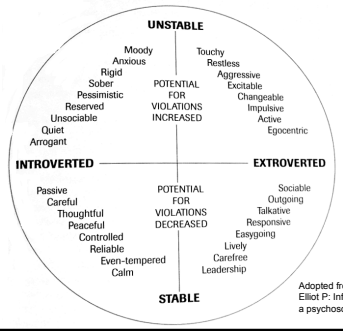
Influence of personality on potential IPC non-compliance



Adopted from - Elliot P: Infection Control: a psychosocial approach

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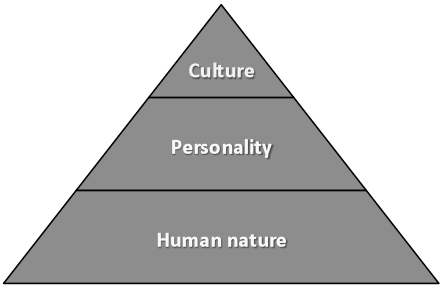
Behavioural influences



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What is "culture"

- '*the way we do things around here*'
- '*the pattern of basic assumptions…*
  that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration…
  and that have worked well enough to be considered valid…
  and, therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems' Schein 1995

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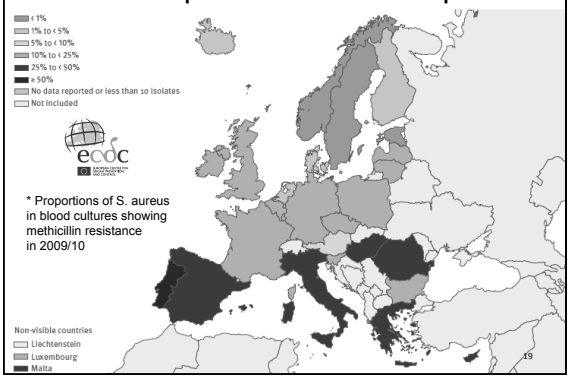
MRSA prevalence in Europe



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Journal of Hospital Infection 81 (2012) 251–256
Available online at www.sciencedirect.com
Journal of Hospital Infection
journal homepage: www.elsevierhealth.com/journals/jhin

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]

Aim: To investigate the possible impact of national cultural dimensions on the epidemiology of MRSA in Europe.
Methods: Median proportions of MRSA bacteraemia were sourced for countries participating in the EARS-Net surveillance network in 2010, and correlated with the national cultural dimension scores of Hofstede *et al*.

Conclusion: Implementation of ICAS programmes often requires behavioural change. Cultural dimensions appear to be key factors affecting perceptions and values among healthcare workers, which in turn are critical for compliance and uptake. Customizing ICAS initiatives to reflect the local cultural background may improve their chances of success.

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Individual correlation and multiple regression analysis between national Hofstede cultural dimension scores and 2010 meticillin-resistant *Staphylococcus aureus* (MRSA) proportions reported by countries participating in EARS-Net

Cultural dimension	Correlation coefficient	*P*
Univariate analysis		
PDI	0.515	0.007
UAI	0.603	0.001
MAS	0.461	0.018
IND	−0.314	0.119
LTO	−0.237	0.243
IVR	−0.078	0.703
Multiple regression		
Constant	−1.551	
UAI	0.365	0.002
MAS	0.214	0.05
LTO	−0.281	0.05
Adjusted R^2	0.475	
F ratio	8.53	
P	0.001	

PDI, power distance; UAI, uncertainty avoidance; IND, individualism; MAS, masculinity; LTO, long-term vs short-term orientation; IVR, indulgence vs restraint.

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Uncertainty Avoidance

Ability to handle daily uncertainties of life and adapt to ambiguous situations

- Respond best to situations of certainty
  - Reactive not pro-active;
  - Crisis management as opposed to business planning
- Bureaucracy and dogmas common
  - Used to obtain certainty even though often counter-productive
- Risk-tolerance
  - Risk situations will not be addressed unless they create uncertainty
  - Uncertainty avoidance is not the same as risk avoidance
    - Uncertainty = anxiety; risk = fear

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Power distance

- Formal hierarchy
  - each tier wields more power than the rank below
  - subordinates are unlikely to be consulted
  - ownership difficult to instil
- Rules apply differently to according to power status
- Personal discretion in the observation of rules
- Accountability perceived as being "enforced" only on the less powerful
  - Justification to excuse non-conformance
  - Strong resentment of accountability instruments
- Going against a power holder may come at a price

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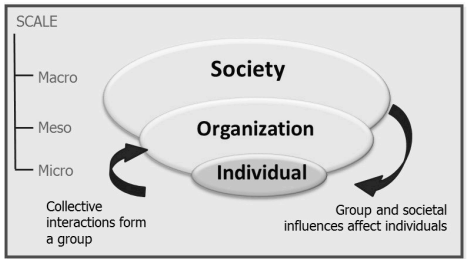
Cultural influences



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You may not be able to change culture but you can modify behaviour...

....especially within organisations

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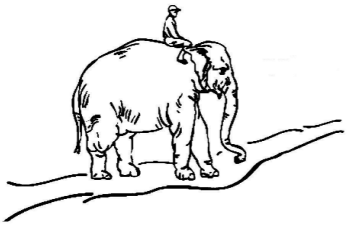
Find the bright spots...

Change process



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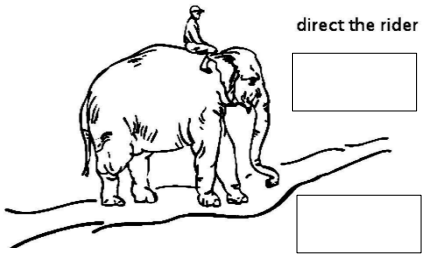

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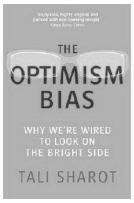
The optimism bias



- When volunteers were given information that was better than they hoped or expected, they adjusted closer to the new risk percentages presented.
- But if it was worse, they tended to ignore this new information.

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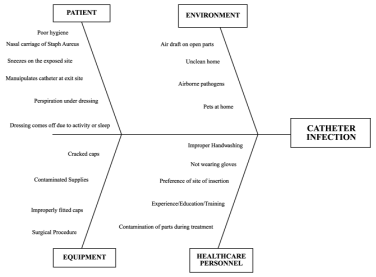
Directing the rider

The power of vivid experience in hand hygiene compliance

- Knowledge of hand hygiene principles was important but not predictive
- Competence as opposed to knowledge
  - often a limiting factor in practice
- Direct vivid experience
  - E.g. personal exposure to an outbreak of infection in the hospital or infection in a patient under care
  - Desensitisation
    - long-term familiarity without apparent adverse consequences

Immediacy of outcomes

Root cause analysis:



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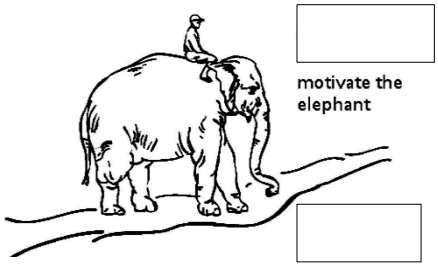

Motivation is rarely easy

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Opinion leaders

The enhancement of infection control in-service education by ward opinion leaders

W. H. Seto, MRCP (U.K.), MRCPath.
T. Y. Ching, RN
K. Y. Yuen, MD
Y. B. Chu, BSc
W. L. Seto, MA
Hong Kong and Champaign, Illinois

- Opinion leaders identified by peers using a simple scoring method
  - involved in the development of intervention and in undertaking the education

	Change in practice score (n)*	Direct observation: Correct practices (n)†
Group A (OL and lecture)	5.63 (*n* = 27)	50% (*n* = 120)
Group B (OL)	4.96 (*n* = 26)	35% (*n* = 116)
Group C (lecture)	3.29 (*n* = 25)	38% (*n* = 210)

Personalities

- Impact of opinion leaders depends on:
  - The degree to which some or all formal and informal leaders are able and committed to make change happen
  - The strength of social control
- Influential personalities can disrupt initiatives and interventions

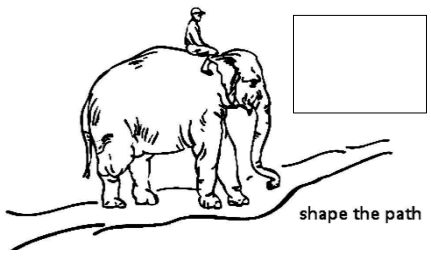
The Joint Commission Journal on Quality and Patient Safety

Infection Prevention and Control

How Active Resisters and Organizational Constipators Affect Health Care–Acquired Infection Prevention Efforts

Sanjay Saint, M.D., M.P.H.; Christine P. Kowalski, M.P.H.; Jane Banaszak-Holl, Ph.D.; Jane Forman, Sc.D., M.H.S.; Laura Damschroder, M.S., M.P.H.; Sarah L. Krein, Ph.D., R.N.

- "Active resistors"
  - Personnel who vigorously and openly opposed change
- "Organisational constipators"
  - Mid to high level executives who prevent or delay change without active resistance
  - Insidious barriers that increase work required to achieve effective implementation.



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Pitfalls in system change

Peter Drucker

- Culture is a strategic phenomenon; strategy is a culture phenomenon" Paul Bate

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Journal of Hospital Infection 84 (2013) 191–199

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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)[b]	32%	42%	-
USA consumer survey[c]	-	-	80%
USA web survey[d]	-	60%	-
World Health Organization survey[e]	-	52%	86%
UK[f]	79%	-	-
USA[g]	91%	45%	-
UK[h]	-	-	Significant increase
Switzerland[i]	-	33%	81%
Australia[j]	90%	40%	-

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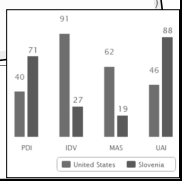
Appendix 6.

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 (survey respondent, USA).

Yes

First it is necessary to change the cultural barriers: patients have no right to tell the physicians what to do (survey respondent, Slovenia).



American Journal of Infection Control xxx (2015) 1–5

Contents lists available at ScienceDirect

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journal homepage: www.ajicjournal.org

Major article

Patient empowerment in a hand hygiene program: Differing points of view between patients/family members and health care workers in Asian culture

Sung-Ching Pan MD, MPH[a], Kuei-Lien Tien RN[b], I-Chen Hung RN[b], Yu-Jiun Lin MS[b], Ya-Ling Yang PhD[c], Ming-Chin Yang PhD[d], Ming-Jiuh Wang MD, PhD[e,*], Shan-Chwen Chang MD, PhD[a,f,*], Yee-Chun Chen MD, PhD[a,b,f,g]

- Patients/families:
  - 95.4% (329/345) had positive attitudes
  - only 67.2% (232/345) had positive intention to remind HCWs about hand hygiene (p<0.001)
  - Risk factors for negative intention
    - female
    - illiterate
    - patients/families in the pediatric department

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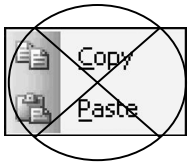


'…a customized intervention from another country that fails to consider local factors … is unlikely to be effective.'

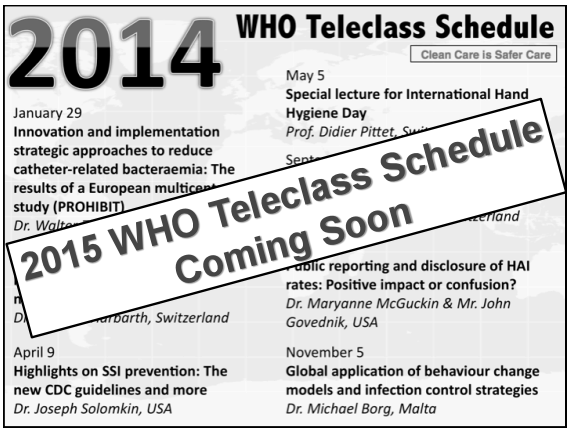
Gould et al J Hosp Infect 2007;65:95e101

Conclusions

- Infection prevention is ultimately all about human behavior
- IPC behavior is a highly complex interaction of:
  - Individual attitudes
  - Social expectations and motivations
  - System facilitation or impedance plus perceptions of self-efficacy
  - Background culture

Conclusions II

- Behavior change can be achieved through effective:
  - Education and competence training
  - Motivation
  - System change
- No two organisations are the same…
  - IPC professionals need to understand local culture
    - National / organisational
  - Interventions need to be adapted according to local situation / culture / circumstances.



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