Global Application of Behaviour Change Models and Infection Control Strategies
Dr. Michael Borg, Mater Dei Hospital, Malta
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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

Critical Care Medicine 2004; 32:10

Eliminating catheter-related bloodstream infections in the intensive care unit

- Educating staff;
- Creating a catheter insertion cart;
- Daily assessment if catheters could be removed;
- Implementing a checklist to ensure adherence to evidence-based guidelines
- Empowering nurses to stop the catheter insertion procedure if a violation was observed

Lancet 2000; 356: 1307–12

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

Impact on hand hygiene & infection rates

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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

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....”

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”

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.”

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!”

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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!!”

Attitudes

• 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

Behavioural influences

Influence of personality on potential IPC non-compliance

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

....especially within organisations

Change process

Find the bright spots...

Eliminating catheter-related bloodstream infections in the intensive care unit*
Susan M. Berenholtz, MD, MSc; Peter J. Pronovost, MD, PhD; Pamela A. Lipsett, MD; Dickstein Holmes, BSc; Karen Stavely, RN, MS; Nancy O. Parma, MSc, MPH, CHPN; Shirley Marxovich, RN, MSN, ACNP, Elizabeth Garrett-Beeler, PhD; Bradford E. Beenes, MD, PhD; Haya F. Rehak, MD, PhD; Todd Denman, MD, Todd M. Perl, MD, PhD;

Addressed central line related bloodstream infection through: Critical Care Medicine 2004; 32:10
• Educating staff;
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Eliminating catheter-related bloodstream infections in the intensive care unit*

Sue M. Sentinel, MS, MHD; Peter J. Parsonnet, MD; Pamela A. Lipton, MD;
Didier Fleurette, USA; Karen Croft, RN, BSN, MS; Jason S. Farley, MD; MPH; C. PhD;
Shelley Wannamaker, RN, MSc, ADCP; Elizabeth Wark-Berge, PhD; Richard D. Berens, MD, PhD;
Haya R. Talke, MD, PhD; Todd Silverman, MD, PhD; Piet, MD, MSc.

Addressed central line related bloodstream infection through:

** Critical Care Medicine 2004; 32:10 **

- Educating staff;
- Creating a catheter insertion cart;
- Daily assessment if catheters could be removed;
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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.

Directing the rider

- 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:

Motivation is rarely easy

Motivate the elephant
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Opinion leaders

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

<table>
<thead>
<tr>
<th></th>
<th>Change in practice score (%)</th>
<th>Direct observation: Correct practices (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (QI and MedLQ)</td>
<td>5.63 (n = 27)</td>
<td>50% (n = 102)</td>
</tr>
<tr>
<td>Group B (QI)</td>
<td>4.96 (n = 26)</td>
<td>36% (n = 116)</td>
</tr>
<tr>
<td>Group C (lecture)</td>
<td>3.29 (n = 25)</td>
<td>36% (n = 210)</td>
</tr>
</tbody>
</table>

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

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Pitfalls in system change

• Culture is a strategic phenomenon; strategy is a culture phenomenon

Paul Bate

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).

First it is necessary to change the cultural barrier, patients have

Table 1: Patient empowerment and hand hygiene, 1997–2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Patient empowerment</th>
<th>Medical hand hygiene</th>
<th>Patient hand hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>1998</td>
<td>60%</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>2001</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>2003</td>
<td>30%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2005</td>
<td>20%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>2007</td>
<td>10%</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

• 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

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

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

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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.