Impact of 10 years multimodal country-wide campaigns to promote hand hygiene in Belgian hospitals

« YOU ARE IN GOOD HANDS »

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DISCLOSURES

No Conflicts of Interest
Background

Healthcare-Associated Infections (HCAI)

Worldwide:

1.4 million people affected
   → ↑ hospital stay
   → ↑ hospital costs and excess mortality
   → ↑ long term invalidity

In Belgium*:

- 7.2% of hospitalised patients
- 2500 – 3000 deaths per year
- nearly 400 million euros per year
- 46.9% compliance in 2004 before campaign

Impact on mortality and costs, KCE, 2008, Belgium
Methodology

Intervention: Nation-wide Hand hygiene campaign

- Organised by the national hand hygiene working group of the federal platform of hospital hygiene and sponsored by the ministry of public health.

- **Objective**: Raising awareness on good hand hygiene (HH) practices and promoting use of alcohol rubs

- **Target population**:
  - HCW having contact with patients hospitalised in acute, chronic and psychiatric hospitals.
  - Patients.
1. **Awareness campaign** with standardised material to improve HH compliance

2. **Measuring** impact of the campaign (Pre - Post campaign)
   - HH compliance (soap and/or alcohol / HH opportunities)
   - *Alcohol rub consumption (litres alcohol rub / 10000 patient days)*
   - *Respect of basic hygiene conditions* (optional, from the third campaign)

*Conforming with hand hygiene recommendations of the Superior Health Council and WHO.*
Planning

1. **Measurement of HH indicators**
2. **Planning**
3. **Measurement of HH indicators**
4. **National Feedback session**
5. **Awareness Campaign**
6. **Measurement of HH indicators**
7. **Real time hospital feedback**
8. **Invitation to participate + press conference**
9. **During 1 month**
10. **1 month later and for 1 month**
11. **1 month later and for 1 month**
12. **2 months later Post-campaign**

**Campaigns:**
- **First campaign:** 2005
- **Second campaign:** 2006-2007
- **Third campaign:** 2008-2009
- **Fourth campaign:** 2010-2011
- **Fifth campaign:** 2012-2013
- **Sixth campaign:** 2014-2015

**Real time hospital feedback**
# Campaign messages

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Hand hygiene, just do it … and with alcohol rubs</td>
</tr>
<tr>
<td>Second</td>
<td>Hand hygiene, do it correctly</td>
</tr>
<tr>
<td>Third</td>
<td>Hand Hygiene, without jewels and with appropriate use of gloves</td>
</tr>
<tr>
<td>Fourth</td>
<td>Doctor, don’t forget, it works and you are a role model</td>
</tr>
<tr>
<td>Fifth</td>
<td>Hand hygiene, do it certainly before any contact with the patient</td>
</tr>
<tr>
<td>Sixth</td>
<td>Hand hygiene, together with the patient</td>
</tr>
</tbody>
</table>
Awareness campaign: multi modal

- Reminders (posters)
- Education of HCW
  - standardised powerpoint presentation
  - Interactive quiz
- Distribution of gadgets for HCW or patients
- Promotion of hand rub (posters, black light)
- Feedback of measurement results before campaign
- Clip video
- Implication of patients (leaflets, gadget, website)
Hand hygiene: talk about it to your healthcare provider.
Let’s avoid infections together!
Measurement of HH compliance

- Direct (overt or covert) observation
- By trained observers (IC practitioner or reference nurses for hospital hygiene)
- Standardised observation grid (WHO proofed)/mobile tablets
- Observation period of 30 minutes, 24/24, 7/7
- Minimum 150 opportunities for HH per unit
- At least intensive care units
- Same methodology before and after campaign
- Online web tool for data entry and real time feedback
RESULTS
## Number of observed opportunities

<table>
<thead>
<tr>
<th>Campaigns</th>
<th>Number of opportunities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before campaign</td>
<td>After campaign</td>
</tr>
<tr>
<td>2004-2005</td>
<td>73 663</td>
<td>72 705</td>
</tr>
<tr>
<td>2006-2007</td>
<td>88 480</td>
<td>84 883</td>
</tr>
<tr>
<td>2008-2009</td>
<td>107 653</td>
<td>109 826</td>
</tr>
<tr>
<td>2010-2011</td>
<td>89 583</td>
<td>79 369</td>
</tr>
<tr>
<td>2012-2013</td>
<td>123 204</td>
<td>115 599</td>
</tr>
<tr>
<td>2014-2015</td>
<td>117 411</td>
<td>104 186</td>
</tr>
</tbody>
</table>
**Globale percentage van handhygiënecompliantie**

<table>
<thead>
<tr>
<th></th>
<th>Periode</th>
<th>Aantal geobserveerde eenheden (n)</th>
<th>Aantal geobserveerde opportuniteiten (n)</th>
<th>Totale observatieduur (Uren)</th>
<th>Observatieduur/10 opp. (Minuten)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Vóór</td>
<td>2</td>
<td>639</td>
<td></td>
<td>22.1</td>
<td>21</td>
</tr>
<tr>
<td>2014 Na</td>
<td>2</td>
<td>190</td>
<td></td>
<td>3.0</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Periode</th>
<th>Aantal geobserveerde opportuniteiten (n)</th>
<th>Handhygiëne Alcohol + zeep (n)</th>
<th>Globale percentage van compliantie (%)</th>
<th>Handhygiëne Alcohol (n)</th>
<th>Percentage alcohol/alcohol+zeep (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Vóór</td>
<td>639</td>
<td>408</td>
<td>84</td>
<td>383</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>2014 Na</td>
<td>190</td>
<td>130</td>
<td>88</td>
<td>126</td>
<td>97</td>
<td></td>
</tr>
</tbody>
</table>
## Participation

<table>
<thead>
<tr>
<th></th>
<th>Acute hospitals</th>
<th>Chronic hospitals</th>
<th>Psychiatric hospitals</th>
<th>All hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Campaign 2005</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>112/116 (97 %)</td>
<td>19/31 (67%)</td>
<td>NA</td>
<td>131/147 (89%)</td>
</tr>
<tr>
<td><strong>Campaign 2006</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>113/116 (97 %)</td>
<td>22/30 (73%)</td>
<td>43/68 (63%)</td>
<td>178/214 (83%)</td>
</tr>
<tr>
<td><strong>Campaign 2009</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>110/113 (97 %)</td>
<td>20/28 (71%)</td>
<td>46/67 (69%)</td>
<td>175/208 (84%)</td>
</tr>
<tr>
<td><strong>Campaign 2011</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>98/107 (92 %)</td>
<td>16/24 (67%)</td>
<td>41/67 (61%)</td>
<td>156/198 (79%)</td>
</tr>
<tr>
<td><strong>Campaign 2013</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>118/120 (98 %)</td>
<td>11/24 (45%)</td>
<td>26/67 (39%)</td>
<td>155/211 (73%)</td>
</tr>
<tr>
<td><strong>Campaign 2015</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/N (%)</td>
<td>123/124 (99%)</td>
<td>11/24 (45%)</td>
<td>18/44 (41%)</td>
<td>152/192 (79%)</td>
</tr>
</tbody>
</table>
HH compliance before vs after campaign

- +19%
- +16.3%
- +11.1%
- +10.6%
- +11.7%
- +8.6%

HH COMPLAINTIE %

Compliantie voor campagne
Compliantie Na campagne

- 1e camp.(2005) 49.6
- 2e camp.(2006) 53.2
- 3e camp.(2008) 58.0
- 4e camp.(2010) 62.3
- 5e camp.(2013) 64.1
- 6e camp.(2015) 69.1

HH compliance before vs after campaign
Campaigns were succesfull

- High participation rate
- Increase of HH compliance at short and long term
- Alcohol rub is widely used
- Physician compliance increased during IVth campaign

To be improved:
- HH compliance before contact (70% min to be reached)
- Patient empowerment
- HH improvement has to become an institutional project
Limitations of methodology

1. Variability of measurements between observers
   ➔ tackled with training:
   - by national workshop for observers
   - by standardised powerpoint presentation
   - by online quiz

2. Observation bias (« Hawthorne effect ») difficult to eliminate

3. Rates of HCAIs were not evaluated
PERSPECTIVES
The 7th campaign

Patient is partner in HH
- Identical to the 6th campaign
- Measurement of the impact of the campaign on the patient via a patient survey questionnaire (JCI)

Implication of hospital management to show everyone (also the patient) that hand hygiene is a priority for patient safety

Development of e-learning modules for healthcare workers education
The Hand Hygiene working group

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