Disinfectants applications:

Examples of Health Care and Food & Beverage

60th meeting of representatives of Member States Competent Authorities for the implementation of Regulation (EU) No 528/2012

Brussels, 20 May 2015

Working together for a cleaner Europe
Introducing A.I.S.E.
International Association for Soaps, Detergents and Maintenance Products

• **Members:**
  - 29 National Associations (Europe & beyond)
  - 9 direct member companies

• **About 900 companies - 60% SMEs**

• **Consumer + Professional Cleaning & Hygiene (PC&H)**

• **Biocidal Product Formulators**
  - Disinfectants PT1 to PT5
  - In-can preservatives: PT6
  - Insecticides and repellents: PT18 and PT19
Disinfectants: essential to Public Health
Examples of targeted applications

Health care
- Hospitals,
- Care homes,
- Dental surgery,
- etc...

Veterinary sector
- Stables, Dairies,
- Slaughterhouses, etc...

Food & Beverage
- Kitchen & Catering
- Food & Beverage production,
- Food preparation (cantines, restaurants),
- etc...

Examples of targeted applications
- Health care
  - Hospitals, Care homes, Dental surgery, etc...
- Veterinary sector
  - Stables, Dairies, Slaughterhouses, etc...
- Food & Beverage
  - Kitchen & Catering
  - Food & Beverage production, Food preparation (cantines, restaurants), etc...
How to manage risks and hazards to consumers in food processing (PT4)?

Paul Verbiest
Sealed Air - FoodCare
EU Portfolio Director - Chemicals
How to balance and manage 3 risks?

Food shortage / Food prices / Shelf life

Microbiocidal contamination

Chemical contamination
Which applications for chemical disinfection can be found in food processing?

- Cleaning in Place Disinfection
- Conveyor belt lubrication
- Open plant cleaning
- Bottle / crate washing
- Membrane cleaning
Application examples - OPC

One coat application
Application examples - OPC
Application examples - CIP
Application examples - CIP
Application examples - CIP
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Application examples - CIP
Which products are used where?

Brewing & Beverage

Dairy

Processed Food

Agri & ILS
A total of 5,648 food-borne outbreaks were reported in the European Union, resulting in 69,553 human cases, 7,125 hospitalizations and 93 deaths.

Most of the reported outbreaks were caused by Salmonella, bacterial toxins, Campylobacter and viruses; however, the outbreak with most human cases was caused by Shiga toxin-producing E-Coli.

The most important food sources of the outbreaks were eggs and egg products, followed by mixed food and fish and fish products. Also chicken products are giving high risk.
Where do these outbreaks happen?

*The European Union Summary Report on Trends and Sources of Zoonoses, Zoonotic Agents and Food-borne Outbreaks in 2011

Figure OUT6. Distribution of strong evidence outbreaks by settings in the EU, 2011

- Household/domestic kitchen: 34.4%
- Canteen or workplace catering: 11.6%
- Other setting: 32.7%
- School, kindergarten: 4.4%
- Disseminated cases: 2.7%
- Residential institution (nursing home, prison, boarding school): 2.4%
- Temporary mass catering (fairs, festivals): 2.3%
- Take-away or fast-food outlet: 1.4%
- Unknown: 2.4%
- Restaurant, Café, Pub, Bar, Hotel: 5.7%

Note: Data from 701 outbreaks are included: Austria (7), Belgium (16), Denmark (76), Estonia (2), Finland (26), France (102), Germany (50), Hungary (20), Ireland (4), Lithuania (3), Netherlands (16), Poland (109), Portugal (8), Romania (5), Slovakia (5), Spain (165), Sweden (22) and United Kingdom (65).

Other settings (N = 81) include: aircraft, ship, train (4), camp, picnic (4), mobile retailer, market/street vendor (5), hospital/medical care facility (7), at hospital or care home (6), farm (primary production) (3) and other settings (52).
Managing risks

- Automation and Validation
- Quality systems
  - Hazard Analysis and Critical Control Points (HACCP)
  - ISO certificates
  - British Retail Consortium
  - International Food Standard
  - American Institute of Baking
  - Six Sigma
  - Total Quality Management (TQM)
Conclusion

Chemical disinfection is essential to:

- To prevent / reduce microbiocidal growth / spoilage in food to ensure human health
- Increase shelf life to limit food waste by reducing micro-contamination
Environmental Hygiene in the Hospital helps improve patient and staff safety

FOUNDATIONAL INFECTION PREVENTION

Ludger Grunwald
Bernhard Meyer

20 May 2015
Problem to Solve

Minimize Healthcare Acquired Infections (HAI)

- >4m Patients Annually
- ~110’000 Deaths
- 16m add. Hospital Days
- € 40bn Cost in EU

20-30% Considered Preventable with Better Hygiene

Source: www.ecdc.europa.eu
Product types

• Biocidal product types:
  – PT1 hand disinfectants
  – PT2 hard surface disinfectants

• The urgent need for an increased use of hand disinfectants is published by WHO:

• 30 – 179 opportunities / patient day\(^1\)

Source: www.ecdc.europa.eu

1) Steed et al., AJIC 2011; 39: 19-26
Why is Environmental Disinfection so Critical – some Facts

- Many pathogens **survive on inanimate surfaces** over a period of days to months, especially if they are embedded in organic material such as blood and protein.

Why is Environmental Disinfection so Critical – the Evidence

- Inanimate surfaces reflect a **source of nosocomial infections** \(^1\) and contribute to their transmission \(^2\).

- **30-60%** of surfaces close to patients colonized/infected with *C. difficile*, VRE or MRSA are contaminated with respective organisms \(^3\).

- Improved decontamination of high touch surfaces lead to a **reduction in MRSA, VRE, C. difficile-HAI and Norovirus infection rates** \(^4\).

- **64% decrease in environmental contamination** in close proximity to patient as a result of improved cleaning disinfection (80%) \(^3\)

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4) Donskey CJ., *AJIC*, 2013, 41, S12-S19
5) Alfa MJ et al., *AJIC*, 2015, 43(2)
## Environmental Disinfection in Critical Areas of Hospitals: Patient Rooms and Bathrooms

<table>
<thead>
<tr>
<th>WHERE</th>
<th>WHAT</th>
<th>WHEN</th>
<th>HOW</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PATIENT ROOM</strong></td>
<td><strong>HTO</strong></td>
<td>At least once daily, or immediately in case of contamination / spills</td>
<td>Wipe thoroughly with a cleaner disinfectant using either ready to use wipes or dry wipes soaked with the appropriate solution. For outbreak situations or blood spills use a virucidal and sporicidal product.</td>
<td></td>
</tr>
<tr>
<td><strong>GENERAL SURFACE</strong></td>
<td></td>
<td>At least once daily, immediately after contamination</td>
<td>GENERAL FLOORS Wipe with appropriate cleaning tools (e.g., mops). For outbreak situations treat as above.</td>
<td></td>
</tr>
<tr>
<td><strong>PATIENT BATHROOM</strong></td>
<td><strong>HTO</strong></td>
<td>At least once daily, or immediately in case of contamination / spills</td>
<td>Wipe thoroughly with a cleaner disinfectant using either ready to use wipes or dry wipes soaked with the appropriate solution. For outbreak situations or blood spills use a virucidal and sporicidal product.</td>
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## Environmental Disinfection in Critical Areas of Hospitals: Operating Room

<table>
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</thead>
<tbody>
<tr>
<td>OPERATING ROOM</td>
<td>STERILE FIELD</td>
<td>After each surgery procedure</td>
<td>Wipe thoroughly with a cleaner disinfectant using either ready to use wipes or dry wipes soaked with the appropriate solution. For outbreak situations or blood spills use a virucidal and sporicidal product.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON-STERILE FIELD</td>
<td>At least once daily</td>
<td></td>
<td></td>
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Safety for Professional User our Top Priority

- Use instructions
- Safety leaflets
- Label pictograms
- Extensive training
- System approach
The Final Prove: Environmental Disinfection in Hospitals Reduces Infection Rates

- Clinical setting

- Change from surface cleaning to surface disinfection

- **Significant reduction in HAI rates for** *C. difficile*, VRE and MRSA

Concluding remarks

• We hope this was useful

• If there is interest, we would be happy to:
  – Repeat such presentation for other areas
  – Organize visits of customers’ sites such as beverage factory, fast food restaurant, etc...
Thank you for your attention
Back-up Slices
No Resistance to Disinfectants

- Review in 2010:
  «We conclude that the current risk to healthcare delivery caused by resistance related to biocides are low, provided that biocides are used under appropriate conditions»\(^1\)

- «...to date there is no strong evidence that reduced susceptibility to antiseptics is a major clinical problem»\(^3\)

- Biohypo project:
  “After three years of fruitful research, while we have encountered different levels of interconnections between biocide and antibiotic resistance, the overall outcome of our research is that there is so far no direct evidence that biocides select actively for antibiotic resistance with clinical relevance.”\(^2\)

1) Meyer & Cookson, J Hosp Infect 2010; 76: 200-205
2) Harbarth et al., J Hosp Infect 2014; 87: 194-202