Antimicrobial Coatings in Healthcare

Company Challenges & Implications for cleaning procedures

WG1&4 workshop of the AMiCi COST Action

Ljubljana (SI), 20 March 2018
WELCOME

Dr. Francy Crijns
*Action Chair*
Senior Lecturer – Researcher, Project leader Antimicrobial Action and Detection, Faculty of Bèta Sciences and Technology Zuyd University of Applied Sciences

Dr. Minna Keinänen-Toivola
*Action Vice Chair*
Research Manager, Head of Smart Urban Business Research Team Satakunta University of Applied Sciences
Objectives – AMiCl COST Action

• To develop, structure, coordinate and maintain a long-term, flexible and open European network in the field of AMC in healthcare.

• To stimulate collaboration between industry and research institutes and disclose state-of-the-art knowledge.

• To evaluate the impact of (introducing) AntiMicrobial Coatings in healthcare on the spread of infections and bacterial resistance to current antibiotics.
AMiCl - Working Groups

WG1: Antimicrobial Coatings Safe-by-Design

WG2: Performance Assessment of Antimicrobial

WG3: Adverse Effects and Risk-Benefit Analysis

WG4: New Cleaning-Hygiene in Healthcare

WG5: Communication & Dissemination
AMiCl - Working Groups

WG1: Antimicrobial Coatings Safe-by-Design

WG4: New Cleaning-Hygiene in Healthcare

WG5: Communication & Dissemination
Program WG1&WG4 Workshop

9:15h – 9:30h: What have we learnt from living lab studies with AMCs in Healthcare?
Francy Crijns, Zuyd University, NL

9:30h – 10:00h: Science meets industry - why are many innovative coating technologies never entering the market?
Simone Schulte, Evonik, DE

10:00h – 11:00h: Solutions and challenges from AMC companies providing AMCs to apply in Healthcare

11:00h – 11:30h: Break

11:20h – 12:00h: Panel discussion

12:00h – 13:00h: Experiences of healthcare facilities that apply AMCs in patient rooms
Brendan Duffy, CREST, IE
What have we learnt from living lab studies with AMCs in Healthcare?

Francy Crijns, Zuyd University of Applied Sciences
Heerlen – The Netherlands
Antimicrobial Coatings: how do they act?

(a) Biocide release  
(b) Contact active  
(c) Anti-adhesive

Antimicrobial Coatings: different types

Living Lab Hospital Study in NL

By Zuyd University of Applied Sciences in NL

- TiO$_2$ nano coating

- Light switch
- Door handle
- (Memo board)
- Nightstand
- Touchscreen

- Bathroom sink
- Nursing cabinet

3 hospitals
4 patient rooms per hospital
7 objects included per room
Set up of the study

- **T0**: Sampling baseline bacterial load (4 weeks – 3x/week)
- **T1**: Application of coating or placebo
- **T3**: Sampling bacterial load (4 weeks – 3x/week)
- **T6**: Sampling bacterial load (4 weeks – 3x/week)

Antimicrobial coating
What have we learnt so far?

- It’s a challenge!
- Hospitals want low impact on budget and work flow (during and after application of the coating) and substantial impact on reducing microbial load (only pathogenic m.o.) and on reducing HAIs.
- Compliance with cleaning products is strongly recommended
- Not many AMCs on the market, to apply on different surfaces in patient rooms
- Many ways to measure AM effectivity in living labs → important to standardize
- Lots of data is needed to show statistical significant effects