Manual reprocessing of surgical instruments

Wolfgang Merkens
Quality Manager
Manager Corporate Planning International
„My autoclaves are working properly! Hence, I do not have any doubts on the premium quality of my sterilized instruments.“

„Where is the problem?“
Approx. 40,000 deaths/year by hospital acquired infections

Approx. 800,000 hospital acquired infections/year

19% of sterilised instruments substandard

40% of CSSD in a specific region substandard

47% of reprocessed endoscopes substandard
„The problem is between our two ears„
„The problem is between our two ears“

Sterilisation is only ONE process of many!
Manual or automated processing?

Priority 2

In case of:
• Non availability
• Maintenance
• Overload in work

Everybody should be trained in both categories!
Your five major items for your daily work are:

1....
2....
3....
4....
5....
The big five

- Goggles
- Suitable gloves
- Water resistant gown
- Appropriate shoes
What is your focus in daily work?
Infections

Hepatitis B/C
HIV
SSI
VAP
BSI
Segmentation of Hygiene - Risks

Infections
- Hepatitis B/C
- HIV
- SSI
- VAP
- BSI

Toxic Reactions
- Cell residues
- Chemical residues
Segmentation of Hygiene - Risks

- Infections
  - Hepatitis B/C
  - HIV
  - SSI
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- Toxic Reactions
  - Cell residues
  - Chemical residues

- Mechanical/functional damages
  - Material damages
  - Fatigue of material
Segmentation of Hygiene - Risks

- Infections
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Segmentation of Hygiene - Risks

- Infections
- Toxic Reactions
- Mechanical/functional damages

Cell residues

CLEANING
“Dirt” to be removed from instruments:

- Blood
- Secretions
- Drugs
- Human tissues
- Water ingredients
- Chemistries
- ...

Some household cleaners

Anionics ( - )

Disinfectant/cleaner

Cationics ( + )

Inhibition of cleaning and disinfection!!!
What are disinfectants in charge of?
The right choice for suitable chemistries

Requirements

• Cleaning
  +
• Maintaining
  +
• Disinfection
### Disinfectants

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<tr>
<th></th>
<th>Microbiology</th>
<th>Materialcomp.</th>
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The options

Cleaners

- Surfactants
- Complexing Agents
- Alkali
- Acids
- Enzymes
### Cleaners
- Surfactants
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- Acids
- Enzymes

### Disinfectants
- Kationic compounds
- Aldehydes
- Peracetic Acid
- corrosion inhibitors
- stabilizers
-.....
The options

1 ➔ 2
1 + 2

Cleaners
- Surfactants
- Complexing Agents
- Alkali
- Acids
- Enzymes

Disinfectants
- Kationic compounds
- Aldehydes
- Peracetic Acid
- corrosion inhibitors
- stabilizers
- …..

Disinfecting Cleaners
- Combination of various active compounds
CEN TC 216 WG 1 Standard Testmethods
- Instruments -

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<th>Phase/Step</th>
<th>Activity Claim</th>
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Note: No standard for cleaning available!
Procedures
1. Work place

- bath near point of care
- safe and suitable transport media
- safe protective equipment (cap, gown, gloves, goggles, shoes)
- proper cleaning utensiles (brush, sponge, wipe)
- appropriate water quality
- suitable space for effective work
2. Immersion of instruments – directly!
   - protection of staff
   - no fixing and/or drying of organic or chemical load
   - no blood aggressivity against steel
   - time/cost management

3. Immersion of instruments – completely
   - scissors and forceps open
   - hollow areas completely flooded without air residues
   - all surfaces covered with solution

4. Separation of corroded/damaged instruments – immediately
   - „infection“ to other instruments
4. Quality assurance

- staff educated and trained?
- staff protected including vaccination?

- devices dedicated for reprocessing?
- correct chemistry in use?
- correct working procedure according to protocol?
- contact time watched?
- all residues rinsed?
- devices in correct condition after reprocessing?
- sterilisation or just disinfection → spectrum?
- packaging and storage clearly defined?
Mistakes in reprocessing

...and how to prepare a correct solution?

Exercise:
How to prepare a 3% solution in a 2-ltr bath?

Answer: 1.940 ml water + 60 ml disinfectant
water FIRST – chemistry SECOND
stir up the solution
Neither faith nor expectations in techniques should be overestimated.
Neither faith nor expectations in techniques should not be overestimated.

Manual workload still exists at a high extend and needs special attention, special education and special skillful trainings.

Chemistries (as technical equipment) do have limited capabilities.

The right choice and the right use according to EU Standards is advisable.
Thank you for your attention