Central Reprocessing of Flexible Endoscopes

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Medisch Spectrum Twente
Introduction
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Introduction
1. Scope types
2. Reprocessing process
3. Anatomy of Scopes
4. Centralized vs. decentralized reprocessing
5. Regulations
6. Logistics
7. Lay out
8. Future
<table>
<thead>
<tr>
<th>Scope Types</th>
<th>Rigid</th>
<th>Flexible</th>
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</table>
| No biopsy port | Normal optics  
• Arthroscopy  
• Laparoscopy  
DaVinci optics | ENT /Anest.  
*Choledocho scopes*  
*Angio scopes*  
*Neuro endoscopes* | |
| With biopsy port / Working channel | Urology  
Gynecology | Gastro Intestinal  
Pulmonary |
### Spaulding classification

<table>
<thead>
<tr>
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<th>NON CRITICAL</th>
<th>SEMI-CRITICAL</th>
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<tbody>
<tr>
<td>Perforating skin / Mucous membranes</td>
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<td>STERILIZATION</td>
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<tr>
<td>Non perforating Mucous membranes</td>
<td></td>
<td>DISINFECTION</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>CLEANING</td>
<td></td>
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</table>

**RISK FOR INFECTION**
Methods

Rigid scopes:
• Sterilization
  – Steam
  – $\text{H}_2\text{O}_2$ Gas plasma

Flexible scopes:
• High level disinfection
  – Glutaraldehyde 2%
  – Peracitic acid
Cleaning- and Disinfection room

ENDOSCOPY ROOM / OR

ENDOSCOPY

PRE-RINSING

TRANSPORTATION

DRYING

MACHINE DISINFECTION

MANUAL PRE-CLEANING

TRANSPORTATION

LEAKAGE TEST

Cleaning- and Disinfection room
Central vs. decentral

Advantages decentral unit:

• Direct commitment of user
• Ownership of process
• Logistics simple
Central vs. decentral

Advantages central unit:

• One production site / standardized logistics
• Clear responsibilities
• Quality of process/ Quality assurance
• Investment costs / Efficiency of scale
• Process knowledge
• Education
• (Standardization of scopes)
Knowledge

Knowledge:

• Process
  – SOPs
  – Logistics

• Materials
  – Scopes
  – Disinfectants

• Hygiene

• Hazards
Knowledge

Education!

- Professional
- Training on the job / Supervising / Coaching
- Refresher courses
- Accreditation
Regulations

Medical Device Directive MDD 07/47

NEN-EN-ISO 15883-4:
  Requirement and tests for washer-disinfectors employing chemical disinfection of thermolabile endoscopes

Netherlands:

SFERD 2009 (Steering committee Flexible Endoscope Cleaning & Disinfection)
http://www.cscnl.net/publicaties/cat_view/18-publicaties-/6-publicaties/28-flexibele-endoscopen

WIP (Working group Infection Prevention)
  Cleaning and disinfection of endoscopes
http://www.cscnl.net/publicaties/cat_view/18-publicaties-/6-publicaties/28-flexibele-endoscopen
Anatomy of scopes

1. No port
2. Water / Air channel
3. Biopsy port
4. Distal lift (ERCP scopes)

5. Miscellaneous
   • Echo endoscopes
   • Accessories
   • Savary dilatators
Anatomy of scopes
Anatomy of scopes

- **Biopsy inlet and rubber seal**: Allows passage of instruments while preventing escape of fluids.
- **Suction control valve**
- **Air/water feeding valve**
- **Air/water port**
- **Suction nipple**: For attachment to external suction device.
Anatomy of scopes
Logistics
Logistics
Logistics
Leakage test
Brushing & Flushing
Installation
Installation
Registration
### Scopenvolgkaart

**CSA - Scopendesinfectie**
- locatie Enschede, telefoon 2657
- locatie Oldenzaal, telefoon 1792

| Scopendesinfectie | CSAnr. | CSA-
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**Datum / tijd desinf.**
- 07-06 14.00

**Contr. kan. aansluiting**
- α

**Nat uitgegeven**
- < 4 uur na tijd desinf. gebruiken

**Scoop naar MTD**
- Datum

**Scopenvolgkaart gecontroleerd**

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**Behandelmamer**

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Registration

Process control
Track & trace
Patient Data System
Lay-out
Lay-out
Drying
Lay-out
Lay-out
Future

Growth:
• Preventive endoscopy GE
• ENT endoscopy

Medical technology:
• Micro endoscopy (mamma)
• Capsule camera system (disposable)

Technical innovation:
• Reposables
  – medical instrument limited to a specific number of uses
  – medical instrument combination of re-usable and disposable components
Conclusions

Centralization:

- Quality
- Cost
- Operations / technology
- Logistics
- Education
Questions?