Best Practice of...

Eleganza 4 – Recommendation: Cleaning & Disinfection
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Preface

Controlling the spread of disease and minimizing the number of healthcare-associated infections are primary concerns for any healthcare facility. There are elements in the environment of a healthcare facility that could actually facilitate the development and spread of infectious disease. Everything from the air in the building to the people who work there can be potential carriers of contamination.

Due to the invasive nature of many modern medical procedures, the opportunity for unrelated infections to develop in hospitals and other healthcare facilities is high. The number of surgeries performed in recent decades has increased, opening patients up to infections at incision sites. There are also a number of diagnostic instruments and other medical devices used in the treatment of disease. It is more critical than ever for hospitals to ensure that infectious diseases do not spread.

A nosocomial infection is contracted because of an infection or toxin that exists in a certain location, such as a hospital. People now use nosocomial infections interchangeably with the terms health-care associated infections (HAIs) and hospital-acquired infections.

One of the most common wards where HAIs occur is the intensive care unit (ICU), where doctors treat serious diseases. About 1 in 10 of the people admitted to a hospital will contract a HAI. They’re also associated with significant morbidity, mortality, and hospital costs.

As medical care becomes more complex and antibiotic resistance increases, the cases of HAIs will grow. The good news is that HAIs can be prevented in a lot of healthcare situations. Read on to learn more about HAIs and what they may mean for you.

Prevention, early detection and treatment are vital for HAIs. Many people are able to make a full recovery with treatment. But people who get HAIs usually spend 2.5 times longer in the hospital.

In some cases, a HAI can seriously increase your risk for life-threatening situations. The Centers for Disease Control and Prevention (CDC) estimate that around 2 million people contract HAIs. About 100,000 of those cases result in death.

Bacteria, fungus, and viruses can cause HAIs. Bacteria alone cause about 90 percent of these cases. Many people have compromised immune systems during their hospital stay – especially in critical care or specialized intensive care environment. These patients are more likely to contract an infection.

The responsibility of HAI prevention is with the healthcare facility. Hospitals and healthcare staff should follow the recommended guidelines for sterilization and disinfection. Taking steps to prevent HAIs can decrease your risk of contracting them by 70 percent or more.

LINET Group as a company is committed to supporting hygiene requirements and improving products in terms of material properties and
design in order to meet the high demands of everyday hospital life, particularly in intensive care.

In the ongoing quest for improved infection prevention measures, the reprocessing of patient beds, mattresses and accessories plays a critical role in minimizing hospital-acquired infections. The need to efficiently reprocess hospital beds is magnified by increasingly shorter hospital stays resulting in more turnover and the need for infection prevention measures to keep hospital-acquired infections in check.

To ensure each patient receives a completely clean bed, you need a streamlined workflow of cleaning and disinfection align with manufacturer’s recommendation regarding material features and the compatibility with different reprocessing products (disinfectant agents).

The purpose of this recommendation is to increase compliance with bed preparation - cleaning and disinfection - in everyday clinical practice in order to prevent the spread of infections through targeted support with information regarding a professional and appropriate reprocessing of the critical care bed Eleganza 4.

2 Introduction - Degree of soiling and contamination of a hospital bed

Observations, samples and investigations indicate that soiling and contamination occur most frequently on an occupied hospital bed as follows:

• Textile dust from bed sheets, mattress pads and duvets, which accumulates on the horizontal surfaces below the mattress.
• Fingerprints on the frame of the bed head and foot and protective grids.
• Urine stains (on the longitudinal bars or fold-down side guards) caused by refilled urine bottles or accidentally loosened hoses at the collecting bag.
• Color stains of antiseptics used for care (removal of urine specimens, insertion of tubes, application of bandages, drips, treatment of sores, etc.) on the longitudinal bars and side rails.
• Residues of vomit, bowel movements, blood, drip fluid, etc. on all accessible areas, depending on the patient’s state of consciousness and the incidents occurring during the hospital stay.
• Leftover food and crumbs on the longitudinal supports of the lying surface, as some patients take their meals while sitting on the edge of the bed.
• Shoe prints on the cover of the chassis

Internal tests by LINET Group and discussions with hygienists as well as experienced service providers confirm that the degree of contamination of some bed areas are more contaminated than others. Therefore, the areas of a hospital bed can be divided into three groups:
Areas of high-grade contamination:
- Parts of the frame of the bed head and foot end
- Side rails
- Accessory rails
- Electrical control buttons – hand control, supervisor and LCD touch screen (if available)

The greater contamination of the areas listed above can be explained by the fact that the patient and/or nursing staff often touch them. Studies reaffirm the risk that hand-transmitted contamination plays a crucial role in healthcare facilities.

Areas of moderate contamination:
- Inside and outside of parts of the bed head and foot
- Bumpers
- IV pole
- Top of the lying surface
- Horizontal bars of the lying surface

Areas of minor contamination:
- Bottom of the lying surface elements
- Mechanical components (below the lying surface)
- Castors

3 Recommendation for cleaning & disinfection (wipe disinfection) of Eleganza 4

3.1 Daily cleaning & disinfection
This recommendation applies for those areas most exposed to contamination and soiling, especially touching by hand.

3.2 Cleaning & disinfection after changing / discharge of a patient
This cleaning applies to all elements of the bed.

3.3 Complete (special) cleaning / disinfection
After the discharge of an infected patient or in wards with a high risk of infection, this hygienic preparation must always be used after the discharge of a patient (e.g. intensive care unit, gastroenterology) in order to offer the greatest possible safety to the next patient.

This recommendation applies to the areas most exposed to contamination and pollution, in particular when hands frequently touch them.
Internal experiments and tests confirm the time spent on the listed cleaning & disinfection procedures, in that one-day daily cleaning can be done correctly by one person in less than 5 minutes, and that approximately 17 minutes per person are needed for cleaning and disinfection when the patient is changing/discharging the ward/hospital. Special cleaning will take about 30 minutes or more – depends on the grade of contamination (germ spectrum).

<table>
<thead>
<tr>
<th></th>
<th>Ø Time required</th>
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<tbody>
<tr>
<td>Daily cleaning</td>
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<tr>
<td>Cleaning after discharge / transfer of a patient</td>
<td>17 min. 15 sec.</td>
</tr>
<tr>
<td>Special cleaning</td>
<td>31 min. 20 sec.</td>
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</table>

4 General instruction for cleaning & disinfection (wipe disinfection)

WARNING!
Risk of injury due to accidental bed movement!
- Always disable the function buttons when cleaning between the undercarriage and mattress support platform.

CAUTION!
Material damage due to incorrect cleaning/disinfection!
- Do not use washing machines.
- Do not use pressure or steam cleaners.
- Follow the instructions and observe the dosages recommended by the manufacturer.
- Ensure that disinfectants are selected and applied exclusively by qualified hygiene experts.
- Respect used materials during cleaning and disinfection!

For information, see the following table:

Eleganza 4 has the protection class IPX4 – protects from splashing water, no matter the direction.
• Do not use any strong acids or bases (optimum pH range 6 - 8).
• Exclusively use detergents that are suitable for cleaning and disinfection medical equipment.
• Do not use abrasive powders, steel wool, or other materials and cleaning agents that might damage surfaces and components of the bed.
• Never use any corrosive or caustic detergents.
• Never use detergents that deposit calcium carbonate.
• Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, etc.).
• Clean and disinfect electrical components carefully and allow them to dry completely.

Observe local directives regarding infection control.

Clean dirty surfaces or areas before disinfecting.

4.1 Preparation

Prepare the Eleganza 4 for cleaning and disinfection as follows (for procedure describes in chapter 4.2.2 and 4.2.3):

• Put the mattress support platform in the highest position.
• Adjust the back and thigh rests so that the reverse sides are accessible.
• Disable the function buttons on the control elements using the supervisor panel.
• Disable the foot controls using the Supervisor Panel.
• Disconnect the bed from the mains.
• Move the bed to the location where it will be cleaned.
• Lock the brakes on the bed.
4.2 Cleaning & disinfection procedure

The hygiene-friendly design of the Eleganza 4 is easy and simple to clean because of easily removable parts (e.g. head and foot ends as well as parts of the lying surface), large and smooth surfaces, a covered chassis (optional) and orderly cable management.

The following procedure is recommended for wipe disinfection of surfaces in order to ensure that all areas are evenly wetted:

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**Fig. 1 Removable head and foot end**

**Fig. 2 Lying surface of Eleganza 4**

**Fig. 3 Cleaning & wipe disinfection**

**Fig. 4 Method of cleaning & wipe disinfection of small surfaces**
4.2.1 Daily Cleaning & Disinfection

Objective:
Regular and systematic cleaning & disinfection of those areas of an occupied hospital bed that are most exposed to soiling and contamination due to repeated contact.

Necessary cleaning utensils and products:
• A clean cloth.
• A pair of household gloves.
• A cleaning and disinfecting agent, diluted as required by the health care organization (or the manufacturer’s instructions).

Method:
Cleaning and wipe disinfection of bed sections with a cloth soaked in diluted detergent / disinfectant

Clean/disinfect the following bed parts:
• All control elements for adjusting the bed
• All handles
• CPR release handle
• Bed ends
• Siderails (in highest position)
• Freely accessible mattress surface
• Mobi-Lift® (if available)
• Accessory rails

4.2.2 Cleaning & Disinfection before changing patients

Objective:
Thorough cleaning and disinfection after changing/discharge of an uninfected patient of those bed areas that may be contaminated or soiled by touching by hand, material or bed sheet contact, secretion, fluid or dust deposits (see also chapter 4.2.3)

Necessary cleaning utensils and products:
• A clean cloth.
• A pair of household gloves.
• A cleaning and disinfecting agent, diluted as required by the health care organization (or the manufacturer's instructions).

Never use scouring agents or scouring pads! Risk of surface damage!
Method:
Cleaning and wipe disinfection of bed sections with a cloth soaked in diluted detergent / disinfectant in the order listed below.

Clean/disinfect the following bed parts:
- All control elements for adjusting the bed
- All handles
- CPR release handle
- Bed ends
- Side rails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails
- All plastic mattress support platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress support platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting
- Bumpers
- Castors
- Brakes

4.2.3 Complete Cleaning & Disinfection

Objective:
Complete cleaning / disinfection of all elements of the bed to remove as many microorganisms from the bed as possible.

Necessary cleaning utensils and products:
- A clean cloth.
- A pair of household gloves.
- A cleaning and disinfecting agent, diluted as required by the health care organization (or the manufacturer’s instructions).

Never use scouring agents or scouring pads! Risk of surface damage!

Method:
Cleaning and wipe disinfection of bed sections with a cloth soaked in diluted detergent / disinfectant in the order listed below.

Clean/disinfect the following bed parts:
- All control elements for adjusting the bed
- All handles
- CPR release handle
- Bed ends
- Side rails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift® (if available)
- Accessory rails
- All plastic mattress support platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress support platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting
- Bumpers
- Castors
- Brakes
- Interior parts (accessible after removing mattress support platform covers)

Mattresses of all kinds are also subject to hygiene regulations regarding cleaning and disinfection. Please, note the separate and specific information (user manual).
A complete cleaning and disinfection of the bed should always be combined with a visual inspection and functional test – movable parts of the beds as well as all control elements (see: Eleganza 4 – User manual, p. 71ff).

Additional information can be found in the document "Periodic preventive maintenance - Safety check", which is available on the LINET Extranet. The type and scope of the functional check are subject to the procedures and standards of the individual hospital.

If the bed functions incorrectly, it may no longer be used in clinical procedures and the service (technical support) should be informed immediately.
## 5 Disinfectant agent

The following list contains all disinfectants currently tested for compatibility with the materials used in intensive care beds (state: 2019_04).

<table>
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<th>Producer</th>
<th>Multicare</th>
<th>Eleganza 5</th>
<th>Eleganza 4</th>
<th>Eleganza 3XC</th>
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<td>Schülke &amp; Mayr</td>
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✓ proofed and compatible

✗ not compatible
6 General information – prevention of care associated infections

Health care-associated infections affect hundreds of millions of patients worldwide every year. Infections lead to illness that is more serious, prolong hospital stays, induce long-term disabilities, add high costs to patients and their families contribute to a massive, additional financial burden on the health-care system and, critically, often result in tragic loss of life.

Hand hygiene is the most important method of preventing and controlling the spread of infections. Hand hygiene is the primary measure to reduce infections. A simple action, perhaps, but the lack of compliance among health-care providers is problematic worldwide.

A range of strategies for hand hygiene promotion and improvement have been proposed, and the WHO First Global Patient Safety Challenge, “Clean Care is Safer Care”, is focusing part of its attention on improving hand hygiene standards and practices in health care along with implementing successful interventions.

The “My 5 Moments for Hand Hygiene” approach defines the key moments where hand hygiene should be performed. This strategy recommends all people - medical, nursing and therapeutic staff as well as visitors - to clean their hands:

- before touching a patient,
- before clean/aseptic procedures,
- after body fluid exposure/risk,
- after touching a patient, and
- after touching patient surroundings (e.g. hospital bed).

In case of touching and using a hospital bed, think about hand hygiene before and after activities.

It is extremely important that care and medical staff, therapeutics, patients and visitors have clean hands.

Clean hands prevent patient suffering and save lives.

LINET Group as a company is committed to supporting hygiene requirements and improving products in terms of material properties and design in order to meet the high demands of everyday hospital life, particularly in intensive care.

Thank you for supporting the worldwide efforts to prevent infections also for the hygienic reprocessing of hospital beds.
7 Annotations

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<th>symbol</th>
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<td>special product information</td>
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8 References


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https://www.rki.de/DE/Content/Infekt/Krankenhaushygiene/ThemenAZ/B/Bettenaufbereitung.html
https://www.sahealth.sa.gov.au/wps/wcm/connect/Public+Content/SA+Health+Internet/Health+topics/Health+conditions+prevention+and+treatment/Hospital+infections
https://www.sciencedirect.com/topics/medicine-and-dentistry/hospital-infection
https://www.who.int/infection-prevention/campaigns/clean-hands/5moments/en/

User manual and Technical Description / Eleganza 4: Positionable Bed for Intensive Care – version with scales and without scales; D9U001GE4-0101_Version: 04_Publication Date: 2019-04

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