

## Recommendations by the Quality Task Group (96)

# Disinfection of surfaces and medical devices

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## 1. Introduction

Many healthcare employees have expressed a desire for a brief overview of disinfection. This present recommendation is intended as a guide to choosing disinfectants and decontamination measures for surfaces, worktops and medical devices, including different medical instruments and accessories.

Please consult the References for further recommendations and sources.

## 2. Definition

→ **DISINFECTION MEASURES** are designed to prevent the spread of pathogens, and thus of infection, in hospitals and other healthcare institutions.

Besides, much emphasis is placed on protecting → **EMPLOYEES** against infection.

Examples of disinfection measures are as follows

- Hygienic and surgical hand disinfection (is not discussed in this Recommendation)
- Surface disinfection
- Instrument disinfection
- Laundry disinfection (is not discussed in this Recommendation)

→ **DISINFECTION MEASURES** are designed to prevent the spread of infection.

→ **EMPLOYEES** must be protected against infection as well.

## 3. Spectrum of action

The efficacy of a disinfectant and/or disinfection process is determined by, among other things, the antimicrobial → **SPECTRUM OF ACTION** of the respective disinfectant. It is therefore important to be familiar with the following terms in order to properly select and use disinfectants:

- Bactericide: Efficacy against all bacteria (including antibiotic-resistant bacteria, e.g. MRSA) apart from bacterial spores and mycobacteria.
- Tuberculocide: Efficacy against the causative agent of tuberculosis (*Mycobacterium tuberculosis*)
- Mycobactericide: Efficacy against the causative agent of tuberculosis and additionally all other mycobacteria.
- Sporocide: Efficacy against all bacterial spores (e.g. *Clostridium difficile*)
- Levurocide: Efficacy against all yeasts (e.g. *Candida albicans*)
- Fungicide: Efficacy against all yeasts and filamentous fungi/moulds incl. fungal spores (e.g. *Aspergillus* species)
- Limited virucide: Efficacy against all enveloped viruses (e.g. HBV, HCV, HIV, influenza)
- Virucide: Efficacy against all enveloped and non-enveloped viruses (e.g. adenoviruses, noroviruses)

→ **THE SPECTRUM OF ACTION** determines the efficacy of a disinfectant.

## 4. Surface disinfection

The purpose of surface disinfection is to bring the surfaces to a state where they can no longer present a risk of infection. Often, cleaning is carried out at the same time as surface disinfection. The disinfection process used is scour-wipe disinfection. → **COARSE SOILS** must be first removed.

→ **COARSE SOILS** must be removed before surface disinfection.

→ **ADEQUATE WETTING** of all surfaces with the disinfectant must be ensured.

→ **RISK ASSESSMENT** of all surfaces should be carried out.

→ **DURING OUTBREAKS OF SPECIFIC PATHOGENS** the spectrum of action needed is determined by the implicated pathogen.

Surface disinfection is used to disinfect e.g. worktops, floors or medical devices/equipment and accessories [1, 2].

For surface disinfection it is important to ensure that all surfaces to be disinfected are → **ADEQUATELY WETTED** with the disinfectant, without leaving any untreated areas. For health and safety reasons and in the interest of complete disinfectant coverage, the use of sprays for surface disinfection should be restricted to inaccessible surfaces. Otherwise, wipe disinfection should be preferably used.

#### *Risk assessment of surfaces*

First of all, → **RISK ASSESSMENT** of all surfaces should be carried out. The measures agreed should then be incorporated into the written cleaning and disinfection policy. In Germany, the KRINKO Recommendation "Hygiene requirements for cleaning and disinfection of surfaces" can be consulted for further details [1].

#### *4.1 Routine disinfection*

Routine disinfection (regular or prophylactic disinfection) is aimed at protecting personnel and patients and preventing the spread of potential nosocomial pathogens.

The disinfectants selected for routine disinfection must be endowed with at least bactericidal, levurocidal and limited virucidal efficacy and be used in the specified concentration and for the specified exposure (contact) time.

#### *4.2 Disinfection in outbreak settings with specific pathogens*

Selective disinfection measures are taken e.g.:

- in outbreak settings
- in outbreaks involving specific pathogens (e.g. noroviruses, *Mycobacterium tuberculosis*, *Clostridium difficile*).
- if there is evidence of surface contamination, e.g. from blood, pus, secretions or other body fluids

The spectrum of action needed for surface disinfection in association with → **OUTBREAKS OF SPECIFIC PATHOGENS** is determined by the implicated pathogen. In addition to bactericidal, levurocidal and limited virucidal efficacy, tuberculocidal, sporicidal or virucidal efficacy may be required.

The above examples demonstrate how important it is for users to be able to assign microorganisms to the various groups. That knowledge is applied when deciding the spectrum of action needed and the choice of disinfectant.

#### *4.3 Disinfection in settings of officially decreed decontamination*

In Germany, official decontamination measures are regulated by Section 18 of the Projection against Infection Act, using products and processes featured on the RKI List [3].

#### *References*

- 1 Anforderungen an die Hygiene bei der Reinigung und Desinfektion von Flächen. Empfehlung der Kommission für Krankenhaushygiene und Infektionsprävention beim Robert Koch-Institut (RKI), Bundesgesundheitsbl. 2004; 47:51–61.
- 2 AWMF: Hygienische Anforderungen an Hausreinigung und Flächendesinfektion. Arbeitskreis "Krankenhaus und Praxishygiene" der AWMF 09, 2015 (Elektronische Publikation:AWMF online)
- 3 Liste der vom Robert Koch-Institut geprüften und anerkannten Desinfektionsmittel und -verfahren Stand: 31. August 2013, Bundesgesundheitsbl. 2013; 56:1706–1728.