

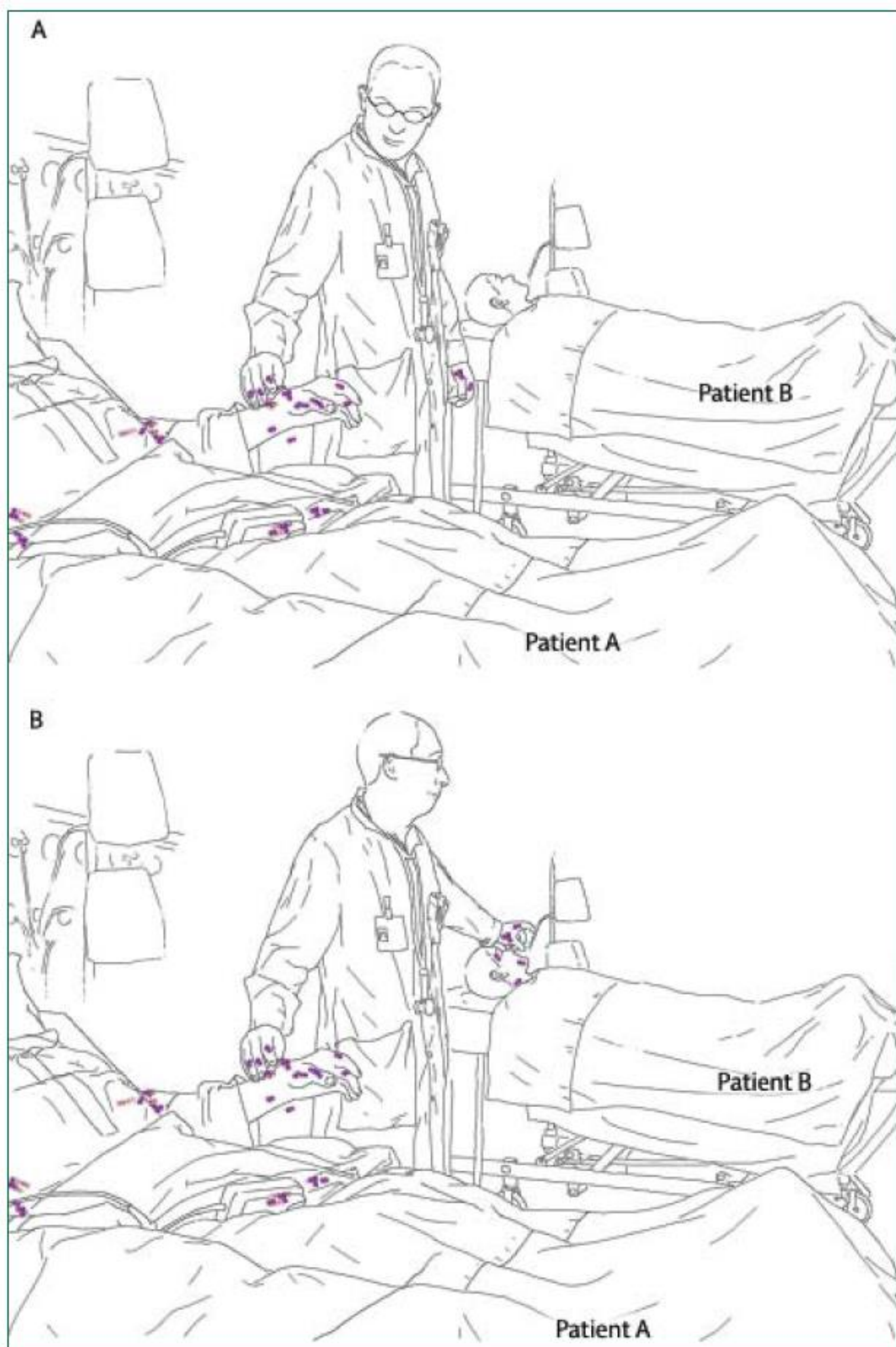


KNIELER & TEAM

comprehensive.solutions

DR. ROLAND KNIELER

**PATIENT NEAR
ENVIRONMENT – STATE
OF THE ART
DISINFECTANTS – A VIEW
ON LATEST STUDIES**



Picture from: Pittet D et al.: Evidence-based model for hand transmission during patient care and the role of improved practices. Lancet Infect. Dis. 2006; 6: 641-652

INTRODUCTION

PATIENT NEAR ENVIRONMENT

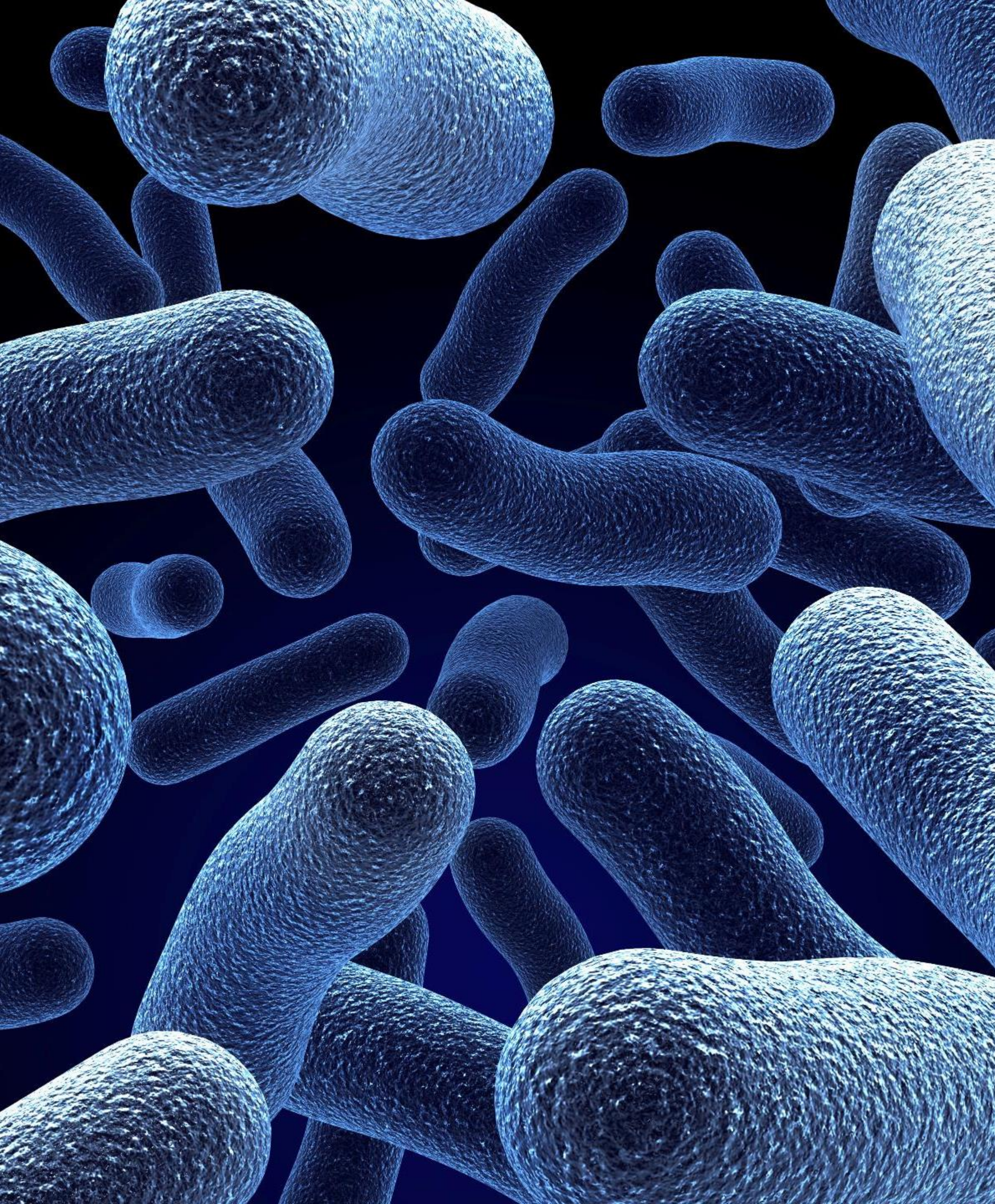
Point of transmission

- High-touch surfaces: bedside rails, bedside tables and the patient himself^[1]

Hand- and surface disinfection

- Efficacy
- Benefit/risk ratio
- Availability, visibility, convenience

^[1]Cheng V.C.C. et al: Hand-touch contact assessment of high-touch and mutual-touch surfaces among healthcare workers, patients, and visitors. Journal of Hospital Infection 2015, **90**: 220-225



INTRODUCTION

DISINFECTANTS AND NEW STUDY RESULTS...

YOU ALWAYS HAVE THE CHOICE!







INTRODUCTION

EXAMPLES OF NEW
STUDIES I SHOW YOU
TODAY...

...DID CREATE
BENEFIT
FOR PATIENTS AND
HEALTHCARE
PERSONAL

REMANENT ACTIVE INGREDIENTS



REMANENT ACTIVE INGREDIENTS

REMANENT ACTIVE INGREDIENTS IN HAND DISINFECTANTS

Remember perfumes and colourants?

Benefit/risk ratio:

**no benefit, but a small risk of creating
allergies**



REMANENT ACTIVE INGREDIENTS

REMANENT ACTIVE INGREDIENTS IN HAND DISINFECTANTS

Remanent active ingredients are agents

- that **remain on the skin** of the hands after the alcohol has been evaporated

ROBERT KOCH INSTITUT



Für die hygienische Händedesinfektion sind Alkohol basierte Formulierungen einzusetzen [*Kat. IB*].

Präparate mit Zusatz antimikrobiell remanent wirksamer Wirkstoffe sind nicht zu empfehlen, da dadurch keine verbesserte Wirksamkeit erreichbar ist, aber das Risiko von Nebenwirkungen ansteigt [*Kat. II*].

REMANENT ACTIVE INGREDIENTS

NO PROVEN
BENEFIT

2016: New KRINKO-guideline

Hand hygiene in healthcare institutions

“Alcohol-based formulations should be used for **hygienic** hand disinfection [Cat. IB].

Products with additional remanent active ingredients **are not recommendable**, since they don't lead to an improved efficacy, but **elevate the risk of side effects** [Cat. II].”¹

¹KRINKO: Händehygiene in Einrichtungen des Gesundheitswesens. Empfehlung der Kommission für Krankenhaushygiene und Infektionsprävention (KRINKO) beim Robert Koch-Institut (RKI). Bundesgesundheitsbl. 2016; 59:1189–1220

ROBERT KOCH INSTITUT



- Für die chirurgische Händedesinfektion sind Alkohol basierte Formulierungen einzusetzen [Kat. IB]...
- Für den Einsatz von Präparaten mit Zusatz antimikrobiell remanent wirksamer Wirkstoffe kann wegen der ungeklärten Nutzen-Risiko-Bewertung derzeit keine Empfehlung gegeben werden [Kat. III].

REMANENT ACTIVE INGREDIENTS

NO PROVEN
BENEFIT

2016: New KRINKO-guideline

Hand hygiene in healthcare institutions

“Alcohol-based formulations should be used for **surgical** hand disinfection [Cat. IB]...

No recommendation can be currently given on the use of products with additional remanent active ingredients, since the **benefit-risk-assessment** is **open.**”^[1]

[1]KRINKO: Händehygiene in Einrichtungen des Gesundheitswesens. Empfehlung der Kommission für Krankenhaushygiene und Infektionsprävention (KRINKO) beim Robert Koch-Institut (RKI). Bundesgesundheitsbl. 2016; 59:1189–1220

REVIEW 2016



Review

Lack of sustained efficacy for alcohol-based surgical hand rubs containing 'residual active ingredients' according to EN 12791

G. Kampf^{a,b,*}, A. Kramer^b, M. Suchomel^c

^a Knieler und Team GmbH, Infection Control Solutions, Hamburg, Germany

^b Institute for Hygiene and Environmental Medicine, University Medicine Greifswald, Greifswald, Germany

^c Institute of Hygiene and Applied Immunology, Medical University of Vienna, Vienna, Austria

Evaluation of published data

- Products containing CHG, MES and OPP were evaluated
- No effect on efficacy

→ No benefit

[1] Kampf G et al.: Lack of sustained efficacy for alcohol-based surgical hand rubs containing 'residual active ingredients' according to EN 12791. JHI 2017; 95: 163-168

THE JOURNAL OF HOSPITAL INFECTION

Lack of antimicrobial efficacy of
mecetronium etilsulfate in propanol-based
hand rubs for surgical hand disinfection

G. Kampf



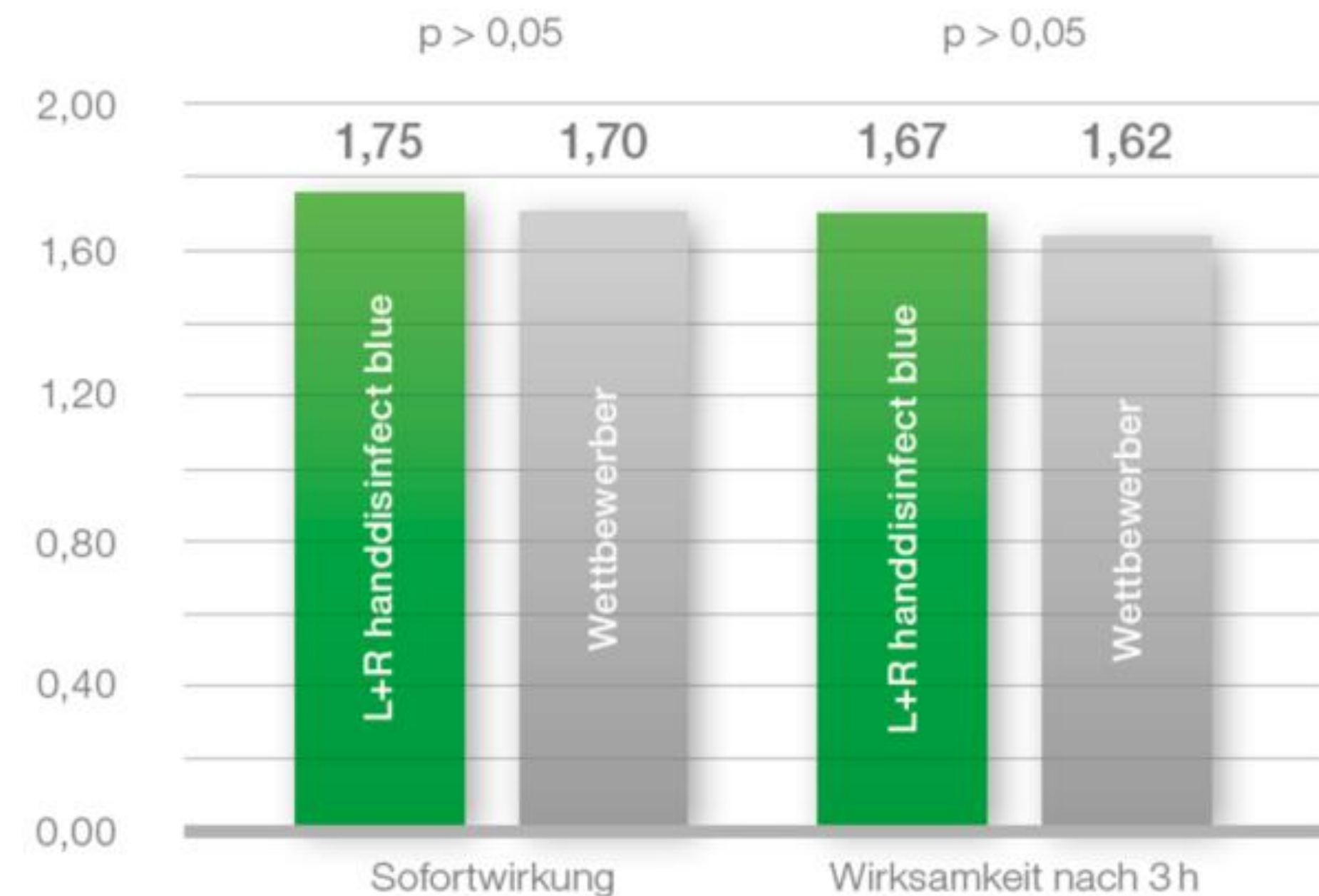
The Official Journal of The Hospital Infection Society



REMANENT ACTIVE INGREDIENTS

DIRECT COMPARISON WITH/WITHOUT MES^[1]

No difference in efficacy – no benefit^[2]



[1] MES: mecetronium etilsulfate, a commonly used remanent active ingredient

[2] Kampf G: Lack of antimicrobial efficacy of mecetronium etilsulfate in propanol-based hand rubs for surgical hand disinfection. JHI 2017; 96(2):189-191

HEALTHCARE PERSONAL AND PATIENT BENEFIT 1



REMANENT ACTIVE INGREDIENTS

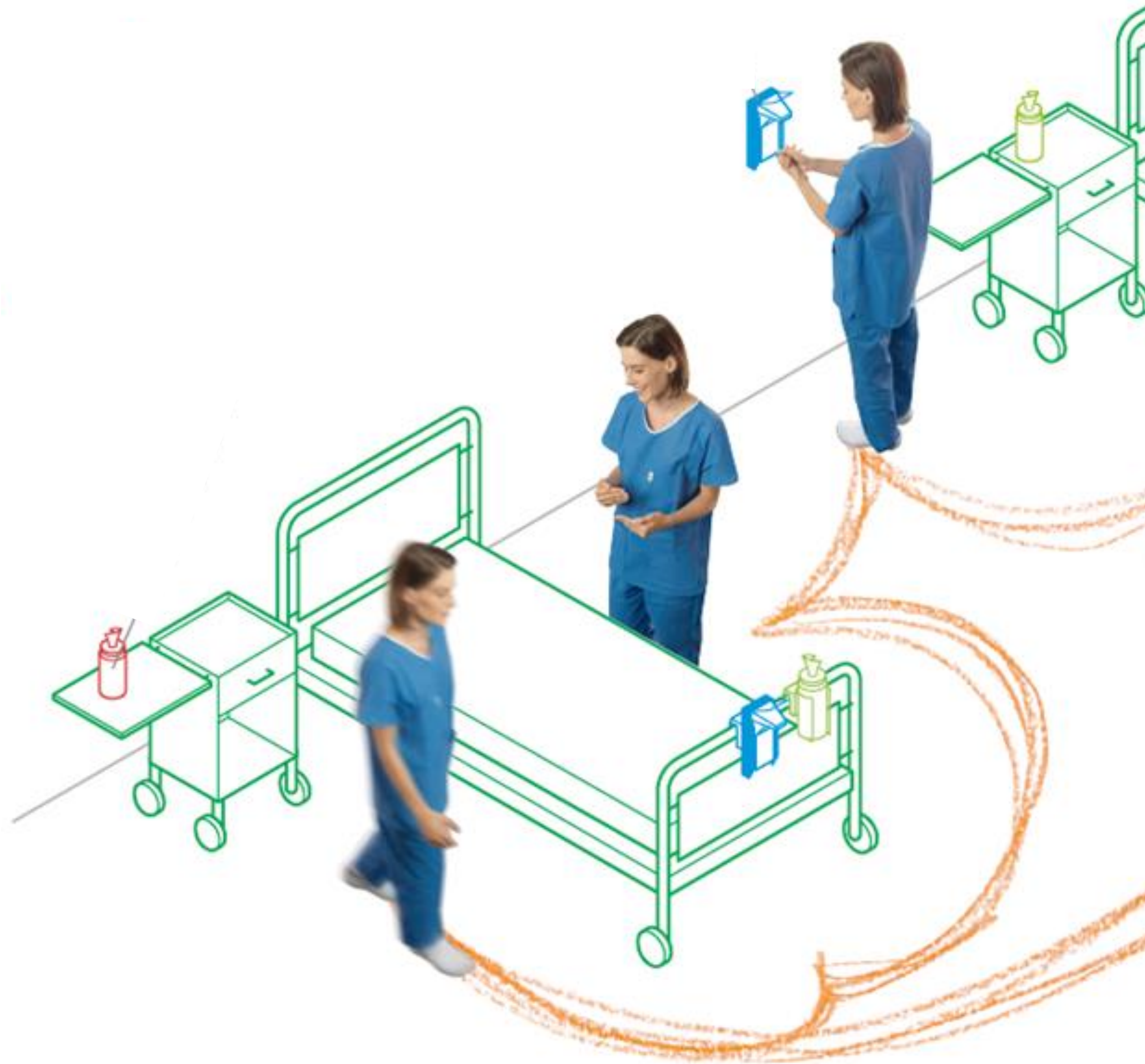
STATE OF THE ART
HAND DISINFECTANTS
ARE

WITHOUT PERFUME

WITHOUT COLOURANT

WITHOUT REMANENT
ACTIVE INGREDIENTS

DISPENSERS



Picture, source: with friendly permission of Lohmann & Rauscher International GmbH & Co. KG

HAND DISINFECTANT DISPENSERS

VISIBILITY AND ACCESSABILITY MATTERS

Signal coloured dispensers improve compliance^[1]

Visible placement in patient near environment improves compliance^[2]

[1]Scheithauer S. et al., Influence of signal colored hand disinfectant dispensers on hand hygiene compliance at a medical intensive care unit, Am. J. Infect. Control. 2014 Aug; 42(8):926-8

[2] Birnbach DJ et al.: Patient safety begins with proper planning: a quantitative method to improve hospital design. Qual Saf Health Care. 2010 Oct; 19(5):462-5

HEALTHCARE PERSONAL AND PATIENT BENEFIT 2



HAND AND SURFACE DISINFECTANT DISPENSERS

STATE OF THE ART
DISPENSERS FOR
DISINFECTANTS ARE:

VISIBLE

PLACED AT THE POINT
OF CARE

REUSABLE WIPE DISPENSERS



CONTAMINATED REUSABLE WIPE DISPENSERS

REUSABLE WIPE DISPENSERS – RISK OF CONTAMINATION

66 dispensers from 15 different healthcare facilities were collected

- 28 dispensers from nine hospitals contaminated (Achromobacter, Serratia) ^[1]

Reprocessing of dispensers difficult due to

- biofilms
- automated procedures (60°C/5 min) ^[2]

[1] Kampf G, von Baum H, Ostermeyer C. Poorly processed reusable surface disinfection tissue dispensers are a possible source of infection. Antimicrobial Resistance and Infection Control 2013; 2: O67

[2] Kampf G, Ostermeyer C. Effective processing of reusable dispensers for surface disinfection tissues – the devil is in the details. Antimicrobial Resistance and Infection Control 2013; 2: P375



Verbund für Angewandte
Hygiene e.V.
Desinfektionsmittel-Kommission

Verantwortlich:
Prof. Dr. med. Martin Exner
(Vorsitzender)
Dr. rer. nat. Jürgen Gebel
(Schriftführer)

CONTAMINATED REUSABLE TISSUE DISPENSERS

REUSABLE WIPE DISPENSERS – NOT RECOMMENDED FOR HIGH RISK AREAS

VAH recommendation 2014 ^[1]

- VAH-Verbund für Angewandte Hygiene, an independent German association of scientists, also editor of a list of certified disinfectants “VAH-List”

[1] Desinfektionsmittelkommission im VAH unter Mitwirkung der 4+4 Arbeitsgruppe. Zur Verwendung von Tuchspendersystemen in Bereichen mit besonderem Infektionsrisiko. HygMed 2014; 39-9

HEALTHCARE PERSONAL AND PATIENT BENEFIT3



CONTAMINATED REUSABLE TISSUE DISPENSERS

STATE OF THE ART
SURFACE
DISINFECTANTS IN
DISPENSERS ARE

SINGLE-USE

READY-TO-USE

No refill bags, no dilution process of concentrate, no reprocessing, no dilutions in sewage system, „dry“ waste going to incenerator

READY-TO-USE FLOW PACKS



QUALITY READY-TO-USE DISINFECTION WIPES

READY-TO-USE WIPES INCREASINGLY IMPORTANT IN HEALTH CARE

**Annual net sales in German hospitals
20 Mio. €, growth rate >25%
(concentrates 9 Mio. €) ^[1]**

Flow packs widely used

**4-Field-test (EN16615) new efficacy
standard^[2]**

[1] IMS DKB Krankenhaus-Sachbedarfsstudie 1Q. 2018, with friendly permission of IQVIA Hospital Services

[2] DIN. *Chemische Desinfektionsmittel und Antiseptika - Quantitatives Prüfverfahren zur Bestimmung der bakteriziden und levuroziden Wirkung auf nicht-porösen Oberflächen mit mechanischer Einwirkung mit Hilfe von Tüchern im humanmedizinischen Bereich (4-Felder-Test) - Prüfverfahren und Anforderungen (Phase 2, Stufe 2); Deutsche Fassung EN 16615:2015*

VOLUME OF APPLIED LIQUID ON THE SURFACE CRUCIAL FOR EFFICACY

sufficient volume necessary to ensure bactericidal efficacy (according to EN 16615)

Example 1:

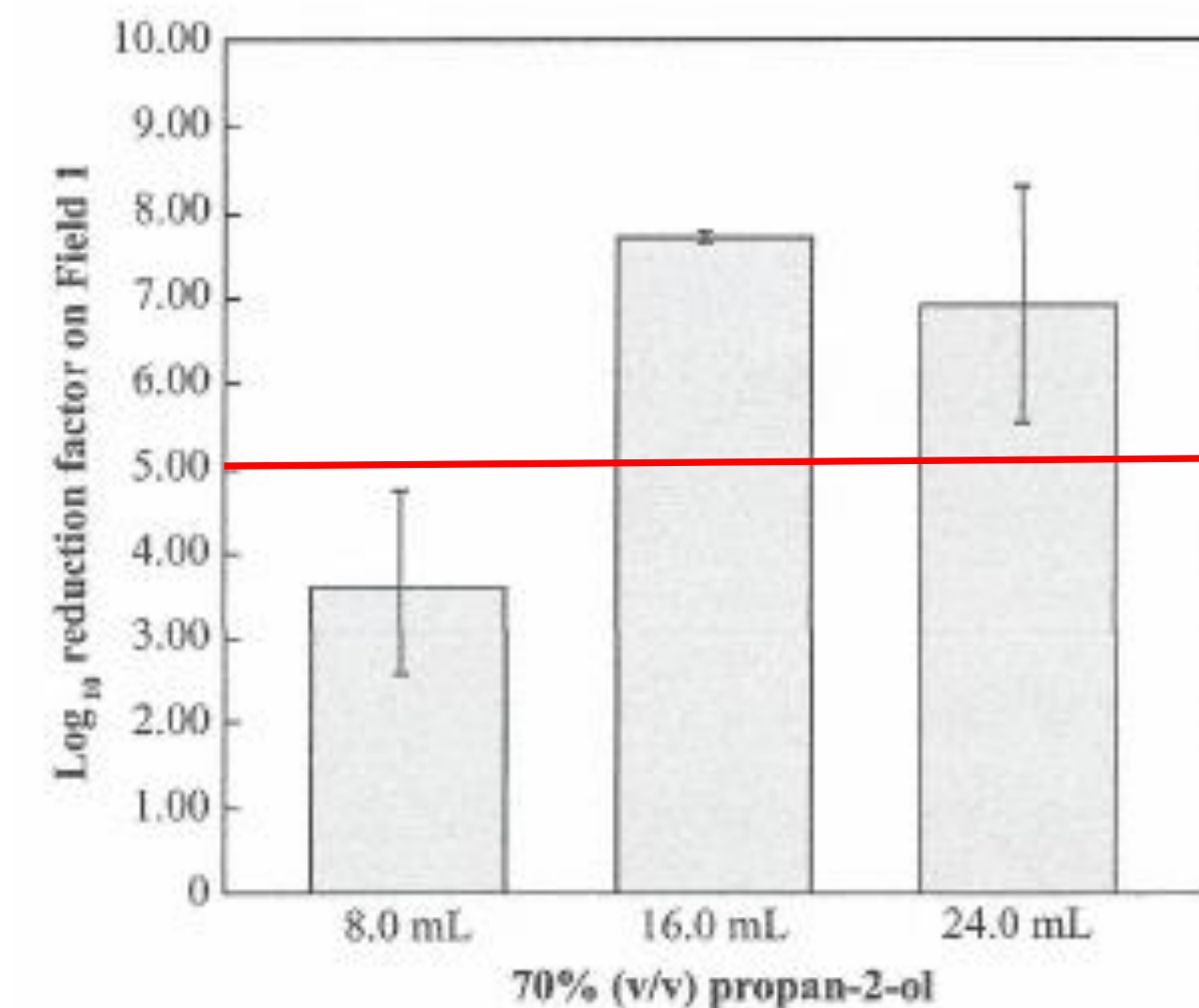
Low soaking volume results in lack of efficacy^[1]

Specific example in publication:
lower limit at approx. 4g liquid/wipe

[1]Knieler, R., HygMed, in press

Example 2:

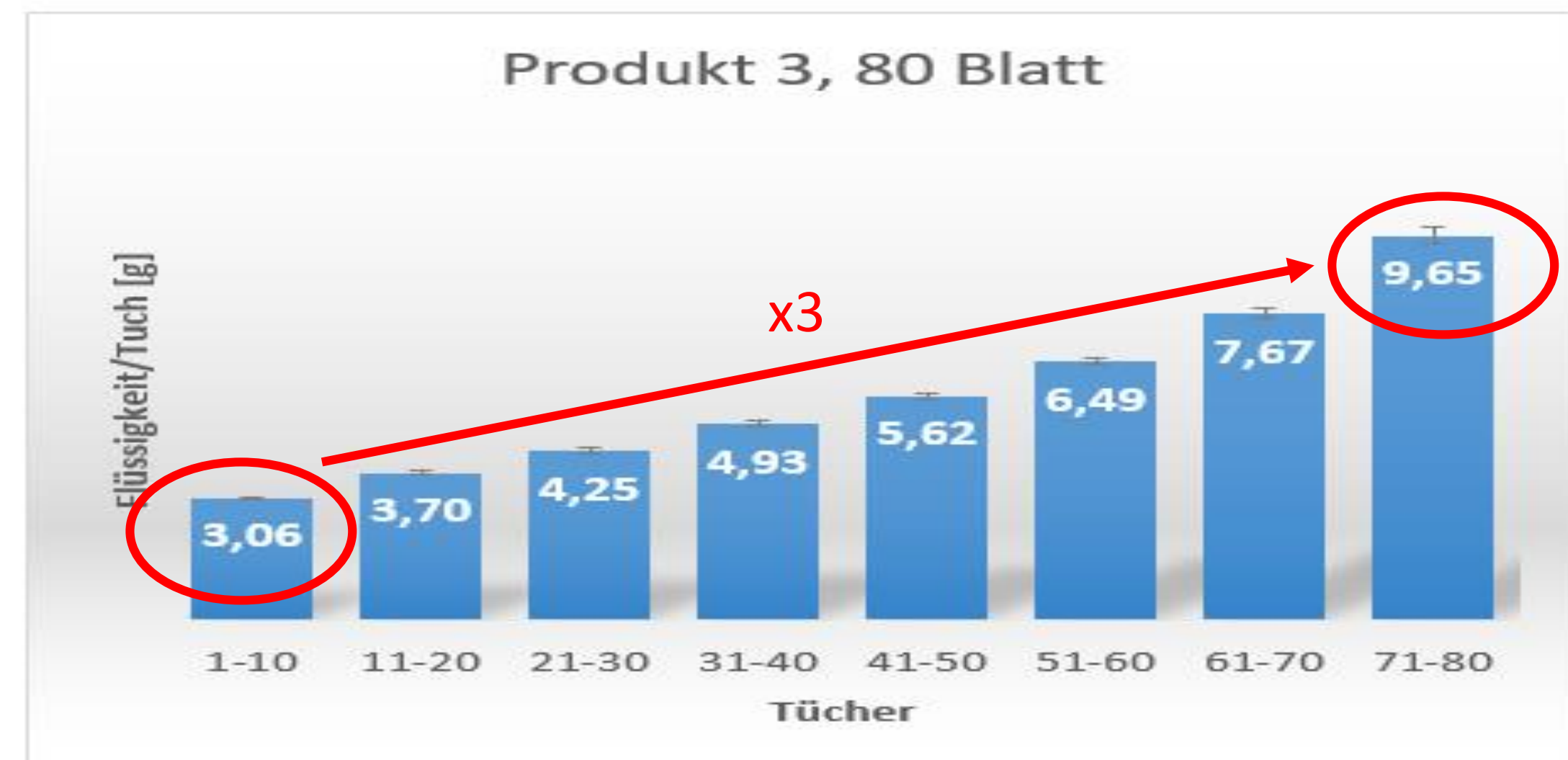
EN 16615
volume per
standard
tissue



[2] Steinhauer K, et al., Why volume matters – implications of applied volume of alcohol-based disinfectants for infection prevention, J. Hosp. Inf. (2018), <http://doi.org/10.1016/j.jhin.2018.09.015>

FLOW PACKS WITH 60 WIPES OR LESS ARE SOAKED MORE EVENLY

microbiological results suggest that the products thus also become safer in terms of microbiological efficacy^[1]



[1]Knieler, R., HygMed, in press

HEALTHCARE PERSONAL AND PATIENT BENEFIT 4



QUALITY READY-TO-USE DISINFECTION WIPES

STATE OF THE ART
READY-TO-USE FLOW
PACKS

FIRST TISSUES MOIST
AND WITH PROVEN
EFFICACY

60 TISSUES PER UNIT
SEEMS TO BE AN UPPER
LIMIT

An underwater photograph of a heavy anchor chain. The chain is made of thick, dark metal links and is covered in a layer of white, crystalline deposits, likely calcium carbonate. It extends from the bottom left towards the top left of the frame. The background is a clear, turquoise blue water column, and the seabed is visible at the bottom, covered in light-colored sand and some small rocks.

ANCHOR POINTS

PATIENT NEAR
ENVIRONMENT

STATE OF THE ART
DISINFECTANTS

HAND DISINFECTANTS: NO
REMANENT ACTIVES

DISPENSERS:
VISIBLE & AT THE POINT OF
CARE

SURFACE DISINFECTANTS:
READY-TO-USE, SINGLE-USE

FLOW PACKS:
PROVEN EFFICACY OF FIRST
TISSUES



Hygiene is a lifetime passion

If you have been seriously bitten by this virus, it will never let you go.

Because you have found something, where you can make things a little better every day as part of a worldwide community.

Many thanks to the  SEMMELEWEIS foundation to give us a platform to share and improve!