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EFFICACY OF WATERLESS HAND DISINFECTION SOLUTIONS FOLLOWING GENERAL EXAMINATION OF HORSES

(Winner of the Voorjaarsdagen Award for Clinical Research at the BEVA Congress 2017)

Reasons for performing study: According to the World Health Organization (WHO), proper handhygiene is the most cost-effective way to reduce healthcare associated infections. Based on "WHO Five moments of handhygiene", hands should be sanitized with a disinfecting hand rubbing solution before and after each patient contact, before an aseptic task, after body fluid exposure risk, and after contact with the patient's surroundings. When hands are visibly soiled a preceding hand-wash with water and soap (W&S) is mandatory. In equine healthcare situations water is not always available and therefore compliance with "handhygiene moments" can be difficult to obtain.

Objectives: Investigate the efficacy of hand sanitation products without preceding hand wash following general examination of horses.

Study Design: In vivo trial.

Methods: An agar finger impression (neutraliser containing tryptophan soya agars) was taken from 20 participants before (BGE) and after general examination (AGE) of a horse and following one of 6 hand hygiene protocols: after W&S (BS1) / after W&S plus 30 seconds alcohol (BS2) / 30 (ST3) or 60 (ST6) seconds alcohol rub only / 30 (S73) or 60 (S76) seconds rub with a non-alcohol antiseptic only. Log₁₀CFU and reduction factors were calculated from CFU identification 24h after plate incubation. Soiled hand surface area was evaluated using photography and computer image analysis. Protocols were statistically compared. Significance: $p \leq 0.05$.

Results: Mean visual hand soiling level was $12.8 \text{ sd} \pm 8.1\%$. None of the protocols was as effective in reducing CFU counts as BS2. S73 revealed as effective as BS1, whereas ST3, ST6 and S76 were significantly more effective than BS1.

Conclusions: A rubbing hand sanitization with 30 seconds application of the alcoholic solution or 60 seconds of the non-alcoholic solution is more effective in removing bacteria compared to hand washing with water and soap only, thus showing great potential for easy hand hygiene of equine practitioners.

- Ethical animal research: not applicable
- Competing interests: none
- Sources of funding: Steri-7 Worldwide Ltd, UK donation for bacteriology testing. Products donated by Bode Chemie, Germany and Steri-7 Worldwide Ltd, UK
- Antimicrobial stewardship policy: not applicable
- Informed Consent: all participants in trial signed informed consent.

Updated Presurgical hand asepsis protocol

https://www.dropbox.com/s/z6w7z3ju9kg7ovr/Poster%20Handhygi%C3%ABne_Eng.pdf?dl=0

5 moments of hand hygiene in equine care

https://www.dropbox.com/s/r8i3fnt29crikof/Poster%20Handhygi%C3%ABne%202016_ENG%202B.pdf?dl=0



Clean Hands Save Lives

Pre-Surgical Hand Asepsis Protocol

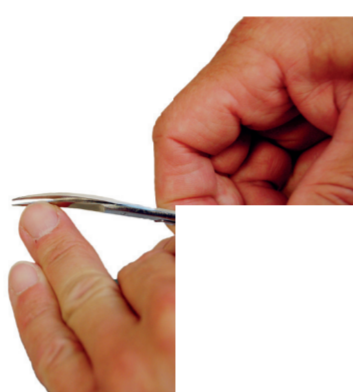
4 Steps: Hygiene, Wash, Disinfect and Care

Surgical personnel should always take care of hand hygiene

Have a proper hand hygiene in and outside the surgical theater.



Clean Hands



Short nails



No artificial nails
No nail polish



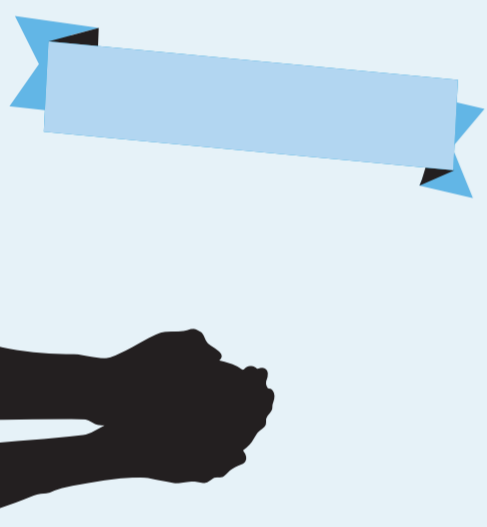
No jewellery



No wounds

1 minute handwash with Neutral Soap (Baktolin®)

This is a cleaning procedure. Before the surgery of the day or when hands are visibly soiled.



Use soap and a dry sponge.



Gently wash hands and forearms including elbow without brushing.



Pick and brush fingernails, rinse with water.



Dry hands and arms with regular paper.

1.5 minute rub with Hydro-Alcoholic Solution (Sterillium®)*

This is the hand disinfecting step. Keep solution wet for 1.5 minutes on skin.



Time your 1.5 minute rub!
Apply on hands and forearms.

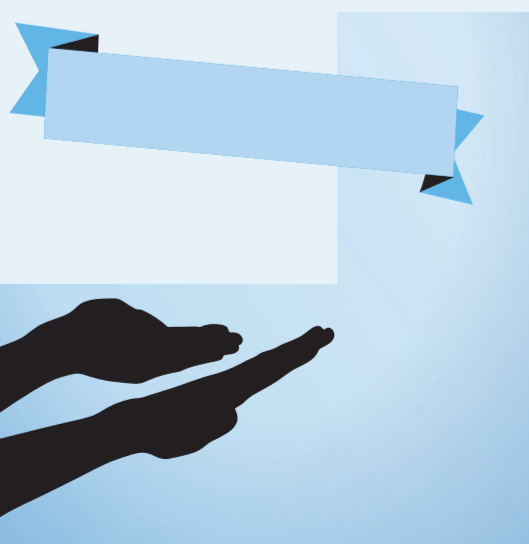
Rub over hands, forearm and elbow.
Include upper arm in abdominal procedures (Large animals).

Concentrate on areas often missed.

Allow to dry before gloving!
Don't wave hands!

Good Skin Care (Baktolan cream®)

Take care of your hands when leaving the surgical theater.



Apply cream on back of hands, rub hands back to back then rest of hand.

Areas frequently missed during disinfecting step!

- Areas frequently missed during disinfecting step.
- Most frequently missed.

* Timing based on the use of Sterillium (Bode-Chemie, Hamburg, Germany). For use with any other products, assure the hydro-alcoholic solution used meets the prEN 12791 requirements for surgical hand asepsis and verify appropriate timing according to manufacturers recommendations.