

schülke -†

Preventive washing in ICUs

we protect lives
worldwide

INTRODUCTION

Rigorous infection prevention is essential in intensive care units (ICU) to minimise the risk of a critically ill patient acquiring a healthcare associated infection (HAI).

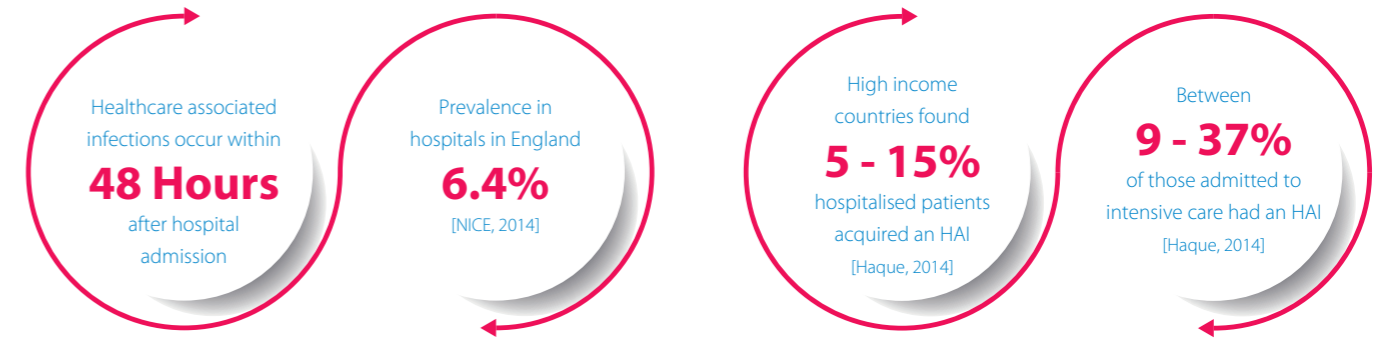
There is evidence that patients admitted to ICU with an HAI have a worse clinical outcome (higher mortality and length of stay), and are more severely ill on admission than patients without [Nuvials, 2015].

Considerable evidence indicates that universal decontamination could have a significant impact on reducing this risk. Decontamination may include an antimicrobial body wash, a nasal gel and mouth rinse.



HEALTHCARE ASSOCIATED INFECTIONS (HAI)

Healthcare associated infections are defined as infections that occur while a patient is receiving healthcare, that first appear 48 hours or more after hospital admission [Hacque, 2018]. Estimates of prevalence vary. The most recent UK data [NICE, 2014] estimates a prevalence in hospitals in England of 6.4%.



Studies conducted in high-income countries found that 5% – 15% of hospitalised patients acquire an HAI. Between 9% to 37% of those admitted to intensive care units had an HAI [Hacque, 2018]

- The most common HAIs include respiratory infections particularly pneumonia and infections of the lower respiratory tract [NICE, 2014].
- HAIs are often caused by methicillin-resistant *Staphylococcus aureus* (MRSA), methicillin-sensitive *Staphylococcus aureus* (MSSA), *Clostridium difficile* (C. diff) and *Escherichia coli* (E. coli) [NICE, 2014].
- Rates of E. coli and MSSA bacteraemia continue to increase year on year [Public Health England, 2019].
- 25% to 30% of the UK population is positive for skin or nasal carriage of *Staphylococcus* [Jeans, 2018].



DECONTAMINATION STRATEGIES

There are two key approaches to patient decontamination:

1. Screening of patients on admission with positive patients undergoing a decontamination regime including the use of a body wash, nasal gel and mouth rinse.
2. Universal decontamination of all admitted patients.

EVIDENCE FOR DECONTAMINATION IN ICUS

- Up to 80% of nosocomial infections from *Staphylococcus aureus* are caused by the patient's own bacterial flora [Critchley, 2006].
- Around one-third of patients newly identified as being MRSA positive develop a subsequent infection, regardless of whether the initial MRSA-positive culture represented colonisation or infection [Huang, 2003].
- A 2011 study concluded that all decontamination strategies in ICU improved health outcomes as well as cutting costs of healthcare provision [Robotham, 2011].

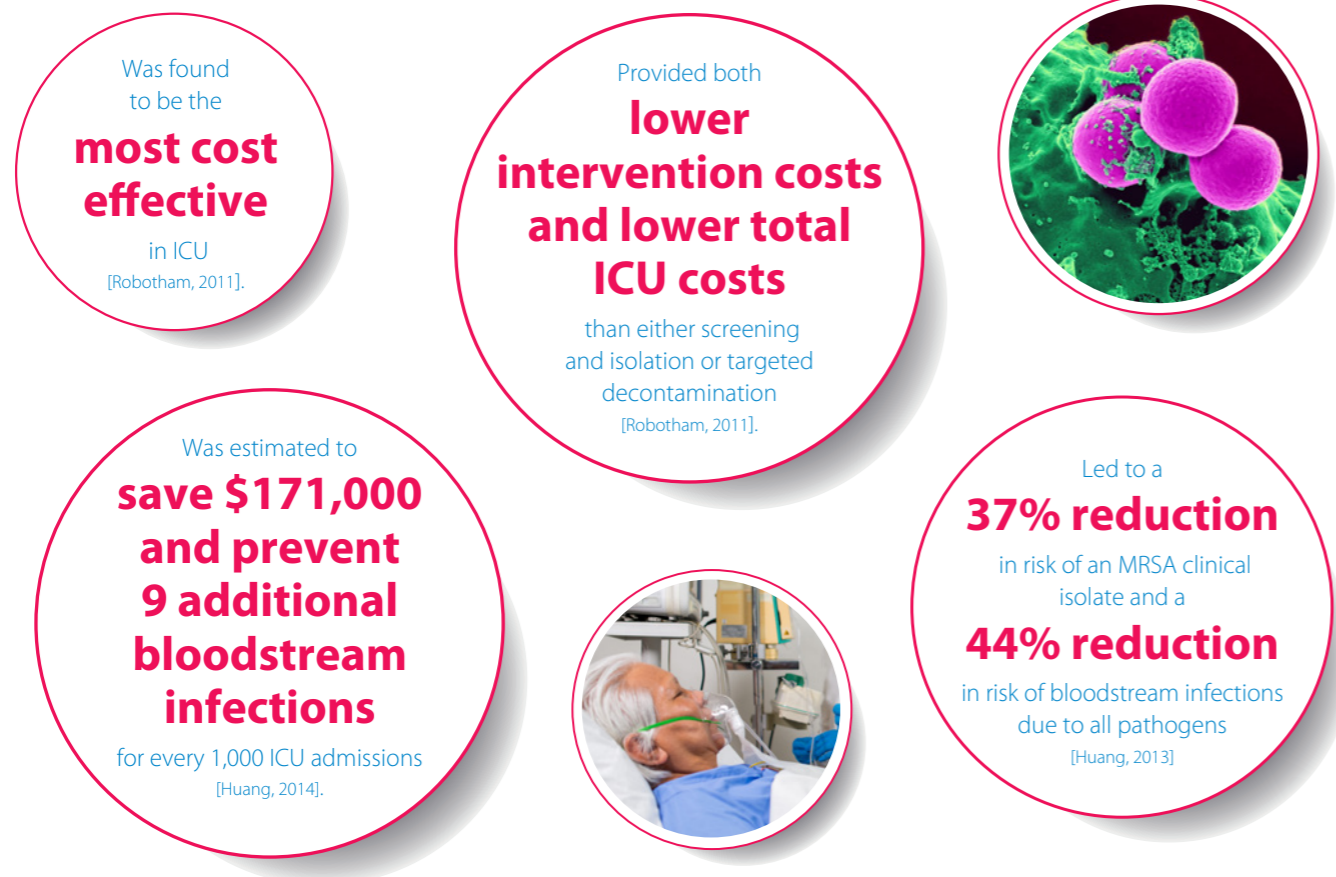
CHOOSING AN ANTIMICROBIAL BODY WASH

The choice of antimicrobial body wash is limited. Chlorhexidine remains the main active used, but concerns have been raised about microbial resistance, and the increasing evidence of tolerances of microbes towards chlorhexidine [Hardy, 2018].

Another available molecule is octenidine, a broad spectrum antimicrobial that is less susceptible to bacterial resistance and also with promising effectiveness reported in ICUs to lower HAIs (see evidence summary below).



UNIVERSAL DECONTAMINATION



EVIDENCE SUMMARY FOR AN OCTENIDINE BASED ANTIMICROBIAL BODY WASH IN ICU

Clinical studies examining the use of an octenidine based antimicrobial body wash in ICU have found the following:

- 76% reduction in the acquisition of multi-drug resistant organisms [Spencer, 2013].
- Significant reduction in ICU-acquired blood-stream infections and MRSA in medical ICUs after implementation of octenidine-based antimicrobial for decontamination [Gastmeier, 2016].
- Nosocomial incidence density of 7.55 (pre-intervention) was reduced to 2.61 (post-intervention) per 1000 patient days [Messler, 2019].
- Nosocomial infections were significantly reduced from 13 cases to 1 case after intervention [Messler, 2019].

DECONTAMINATION IN ICU HAS A POSITIVE IMPACT ACROSS THE WHOLE HOSPITAL

A 2017 study investigated the impact when routine MRSA decontamination in ICU was discontinued. There was a 250% increase in bacteraemia cases across the whole hospital. Six months after reinstating routine decontamination in ICU, cases showed a significant decrease. The researchers concluded that 'routine decolonization for MRSA in a large ICU setting is an effective strategy to reduce the spread and incidence of MRSA across the whole hospital' [Bradley, 2017].



EVIDENCE SUMMARY FOR TOPICAL INTRANASAL OCTENIDINE

- Topical intranasal octenidine together with universal daily antimicrobial bathing can reduce the prevalence of MRSA colonisation [Chow, 2018].
- A study of 1255 patients showed a decline in MRSA colonisation of 58% over one year, when topical intranasal octenidine was used in combination with antimicrobial washing [Chow A, 2018].
- Resistance to mupirocin has been reported to be as high as 81%, [Poovelikunnell, 2015] to date, octenidine has not shown any decrease in antimicrobial efficacy to multi-resistant bacteria [Siebert, 2010].
- A study in a rehabilitation hospital of topical intranasal octenidine showed no reduction in MRSA efficacy over an 8 month period of use [Chow, 2018].



THE OCTENISAN® RANGE

The octenisan® range is ideal for whole body cleansing. It can be used to gently decontaminate the entire body, including nostrils, hair and oral cavity.

Product Description	Size	Case Size	Art. No.	NHSC NPC Code	PIP Code
octenisan® wash lotion	150ml bottle	30	121501	MRB425	333-6765
	500ml bottle	20	121505	MRB423	341-8233
octenisan® wash mitt	10 wash mitts	24	128022	MRB624	368-3836
octenisan® md nasal gel	6ml tube	20	70002424	MRB958	387-0250
octenisan® wash cap	1 wash cap	24	129602	MRB938	386-5821
octenident® mouthwash	250ml bottle	10	70002740	MRB488B	410-8346



USING AN OCTENIDINE BASED MOUTH RINSE

'Supporting seriously ill patients' mouthcare is an important part of overall patient care. If oral hygiene is neglected, the mouth rapidly becomes dry and sore. The aim of good mouthcare for patients in hospital is to maintain oral cleanliness, prevent additional infection and reduce the likelihood of developing bacterial pneumonia.' [PHE, 2020].





- A recent study showed an octenidine based mouth rinse had significant SARS-CoV-2 inactivating properties [Meister, 2020].
- Viable pathogens were reduced up to 99% compared to placebo [Lorenz, 2018].

'Due to its low toxicity and pronounced antibacterial properties, octenidine dihydrochloride (OCT) is a promising candidate for the use in antiseptic mouth rinses.' [Lorenz, 2018].



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