

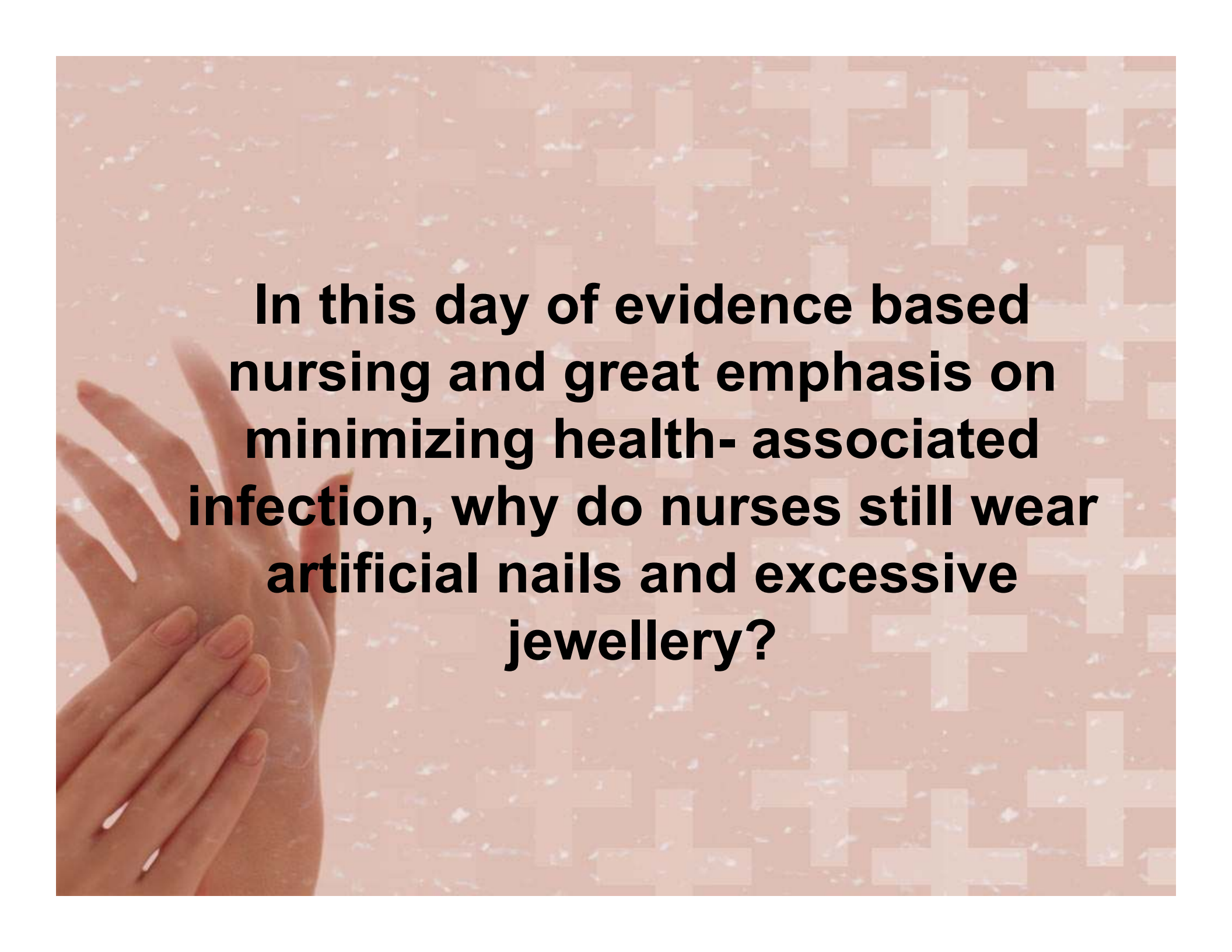


# **ARTIFICIAL NAILS AND JEWELLERY IN THE HEALTHCARE SETTING**


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**In this day of evidence based nursing and great emphasis on minimizing health- associated infection, why do nurses still wear artificial nails and excessive jewellery?**

A photograph of two hands being washed with soap suds. The hands are positioned on the left side of the frame, with the fingers spread and the palms facing each other. The background is a light, textured surface, possibly a wall or a backdrop, with a soft, warm tone. The soap suds are white and foamy, covering the hands and the surface they are touching.

Aim: Participants will further develop knowledge and understanding of -

- The evidence available to support the directives: healthcare workers must not wear artificial nails, stoned rings, bracelets or wristwatches if involved with direct patient care.

**Objectives: At the conclusion of this session the participants will be able to:**

- **Apply knowledge gained to educate colleagues who might still be wearing artificial nails and excessive jewellery**



# Current Policies & Regulations

## NSW Infection Control Policy

### PD2007\_036

- 2.1.1.7 Healthcare workers involved in direct patient care, sterilising services and laboratory staff must not wear artificial fingernails, nail extenders or any nail enhancements (eg painting, varnish or nail art).

# NSW Infection Control Policy PD2007\_036 continued

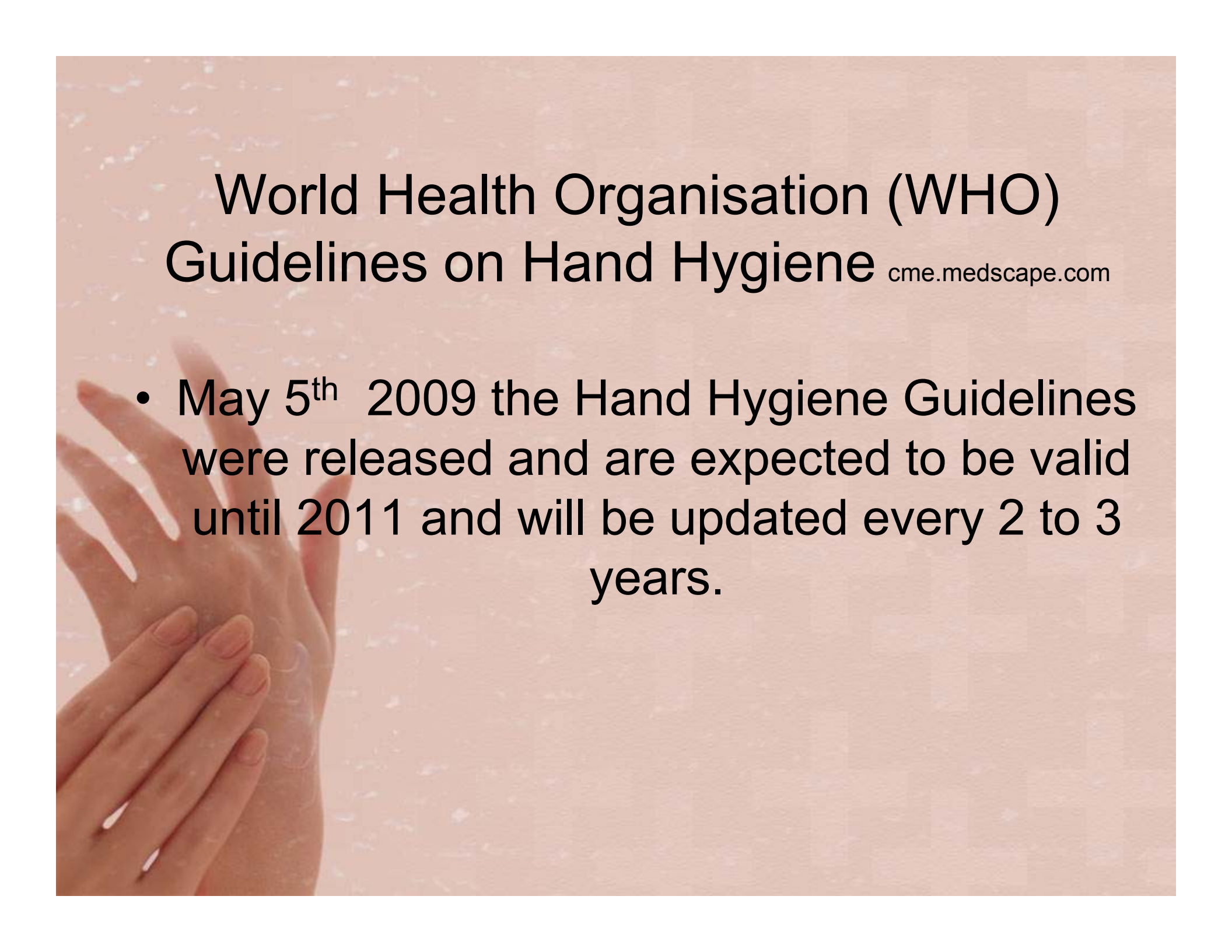
- Rings with large or multiple settings or detailed scrollwork must not be worn during direct patient contact.
- Wrist jewellery must be easily removed for hand hygiene and patient activity, and must not be worn for invasive procedures.

# Nurses & Midwives Regulation Act 2008

- Schedule 4 Infection Control Standards

Contains no provisions regarding the wearing of artificial nails or jewellery



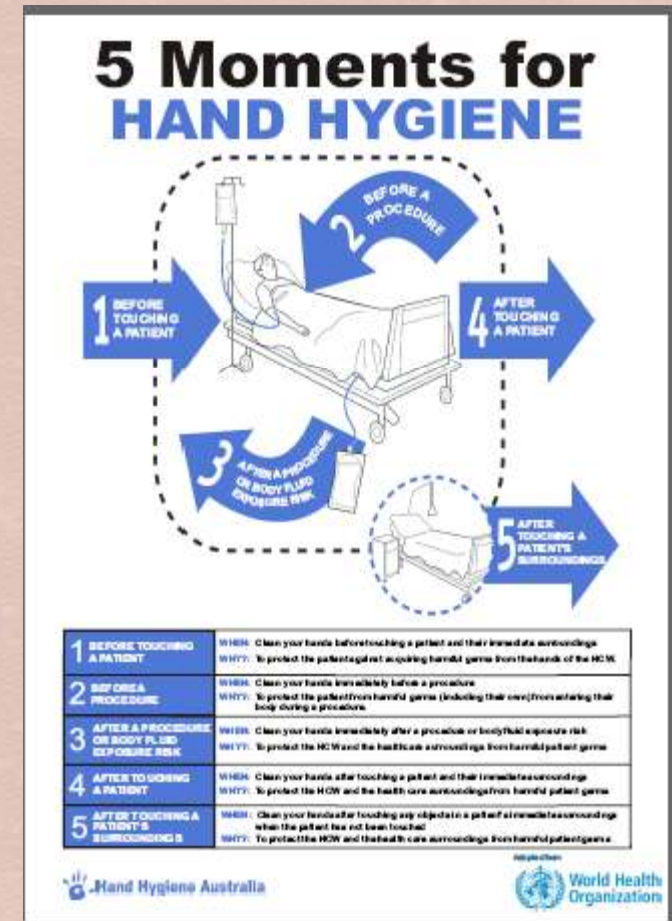


# World Health Organisation (WHO) Guidelines on Hand Hygiene cme.medscape.com

- May 5<sup>th</sup> 2009 the Hand Hygiene Guidelines were released and are expected to be valid until 2011 and will be updated every 2 to 3 years.

# WHO Guidelines on Hand Hygiene state:

- Before beginning surgical hand preparation, remove jewellery. Artificial nails are prohibited.
- Artificial nails or extenders should not be used, and the length of natural nail tips should be less than 0.5 cm.




# Hand Hygiene Australia- [www.hha.org.au](http://www.hha.org.au)

- Jewellery:

Minimal jewellery is recommended such as a plain flat band. Bracelets, wrists watch and rings with stones or ridges should not be worn when providing clinical care. Jewellery must not interfere with effective HH.

- Nails:

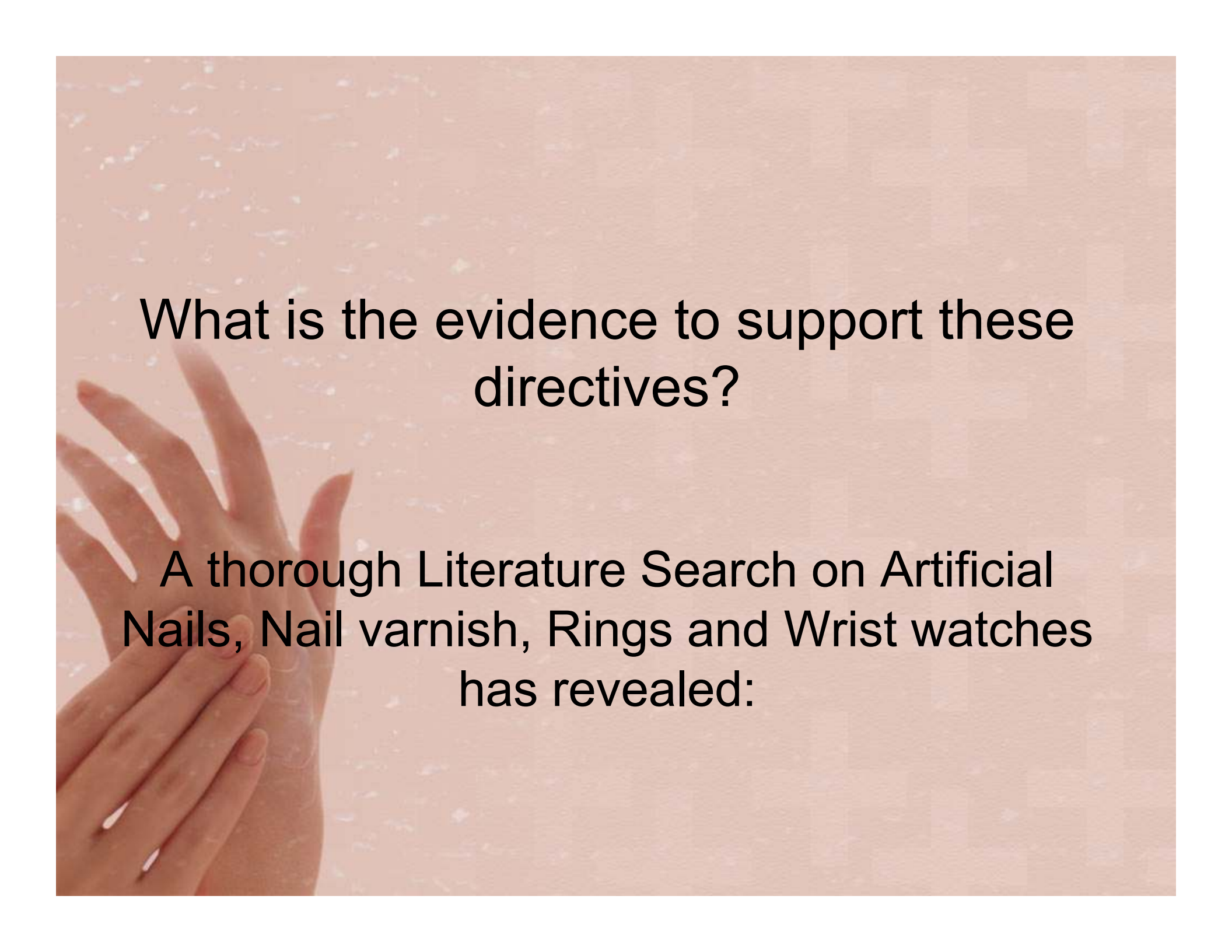
Nails should be kept short and clean and the use of nail polish avoided. Artificial nails have been implicated in a number of outbreaks of health care associated infections and must not be worn by any HCW with direct patient contact.



These are not popular policy directives and many healthcare workers continue to wear artificial nails and jewellery.

- In one study 13% of nurses, aides and technicians reported they routinely wore artificial nails at work

- WHY?

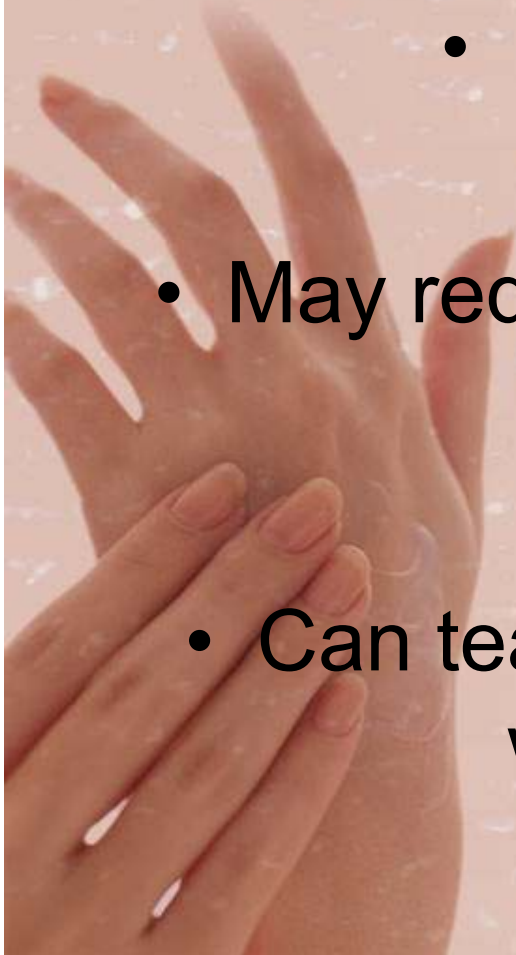


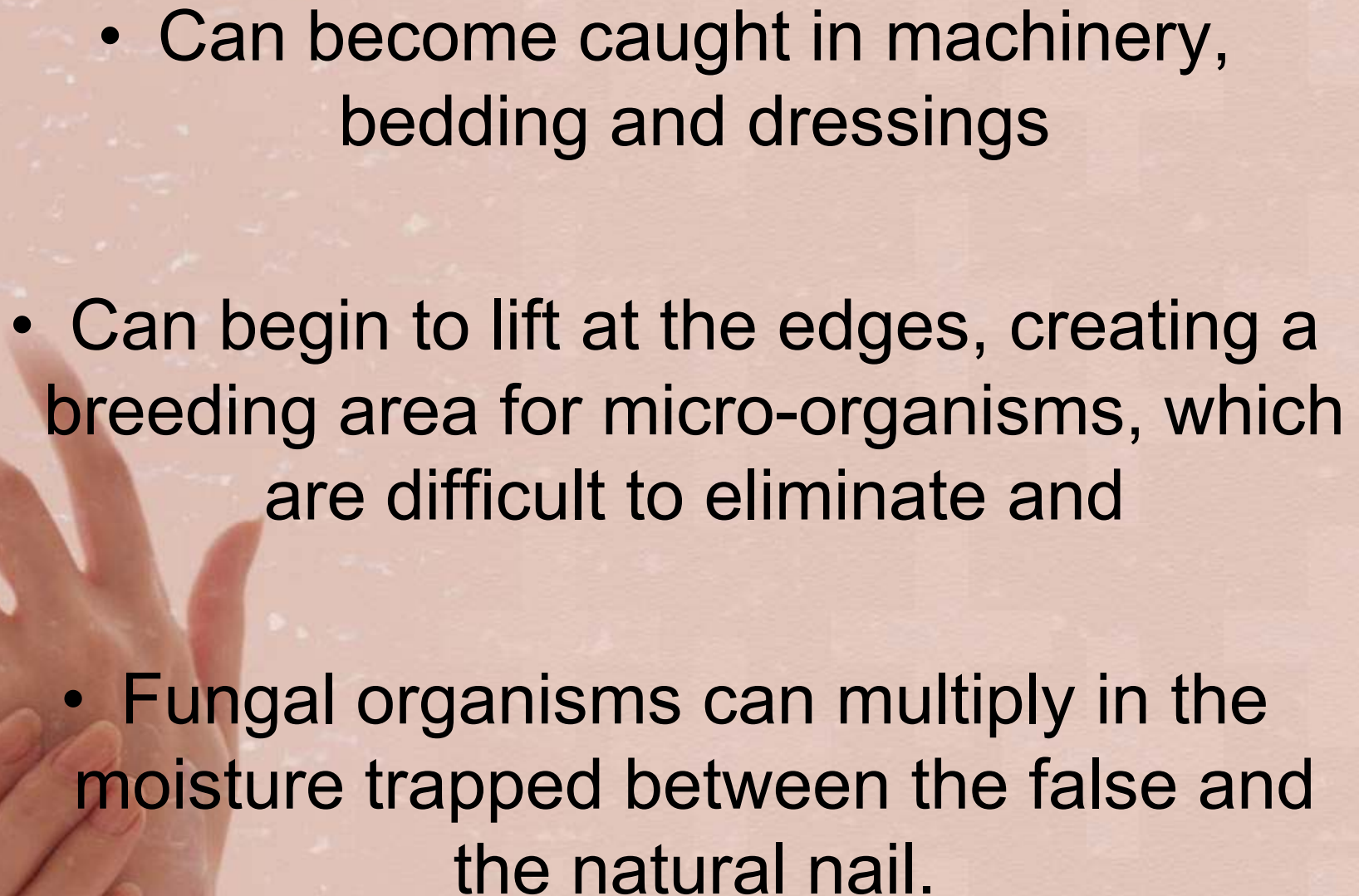
What is the evidence to support these directives?

A thorough Literature Search on Artificial Nails, Nail varnish, Rings and Wrist watches has revealed:

# Reasons why artificial nails must not be worn by healthcare workers:

- Inhibit good hand hygiene
- May reduce grip and decrease the speed of manipulation
- Can tear or puncture gloves or interfere with the donning of gloves



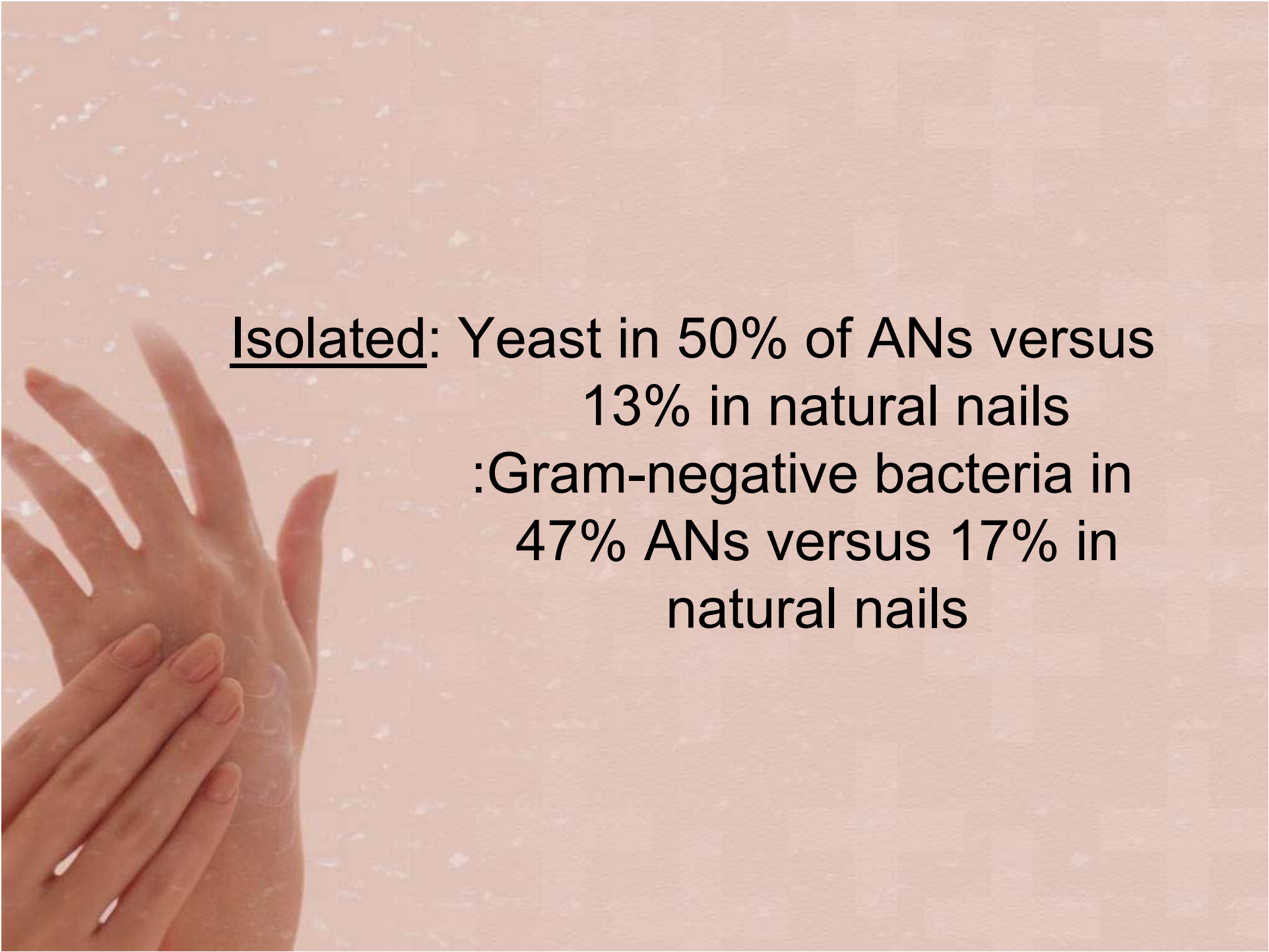
- 
- Can become caught in machinery, bedding and dressings
  - Can begin to lift at the edges, creating a breeding area for micro-organisms, which are difficult to eliminate and
  - Fungal organisms can multiply in the moisture trapped between the false and the natural nail.

# Pathogenic organisms associated with artificial fingernails.

Hedderwick et al. Infection Control and Hospital Epidemiology. 2000; 21(8):505-9

- 92% of artificial nails (ANs) were contaminated compared to 62% of natural nails.
- Colonisation of nails increased over time 21% at day 1 compared with 71% at day 15



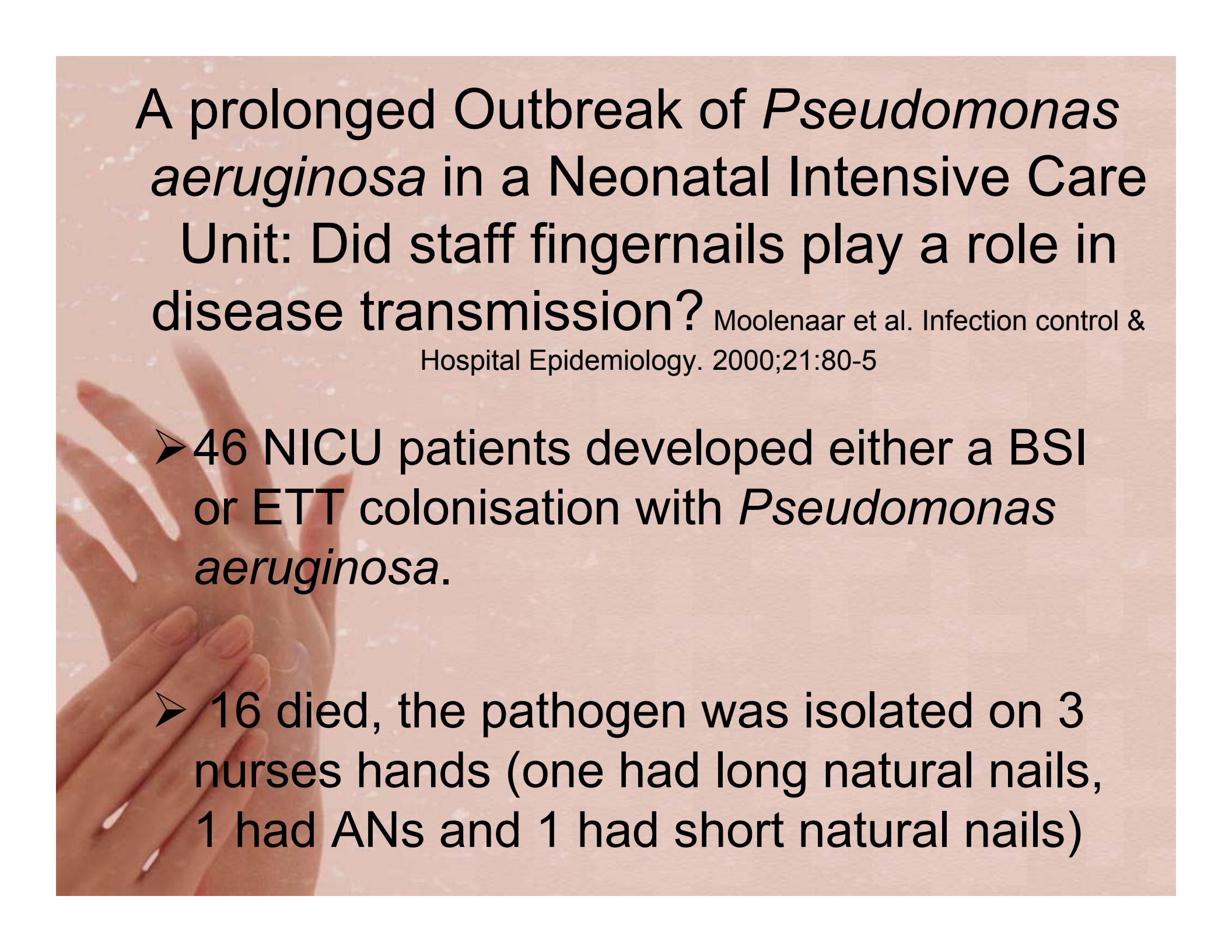
A close-up photograph of a hand being washed with soap suds. The hand is positioned on the left side of the frame, with fingers slightly spread. The background is a soft, out-of-focus light pink or peach color. The text is overlaid on the right side of the image.

Isolated: Yeast in 50% of ANs versus  
13% in natural nails  
:Gram-negative bacteria in  
47% ANs versus 17% in  
natural nails

# Conclusion

- Artificial nails were more likely to harbour pathogens and the longer the nails were worn; the more likely a pathogen would be isolated.

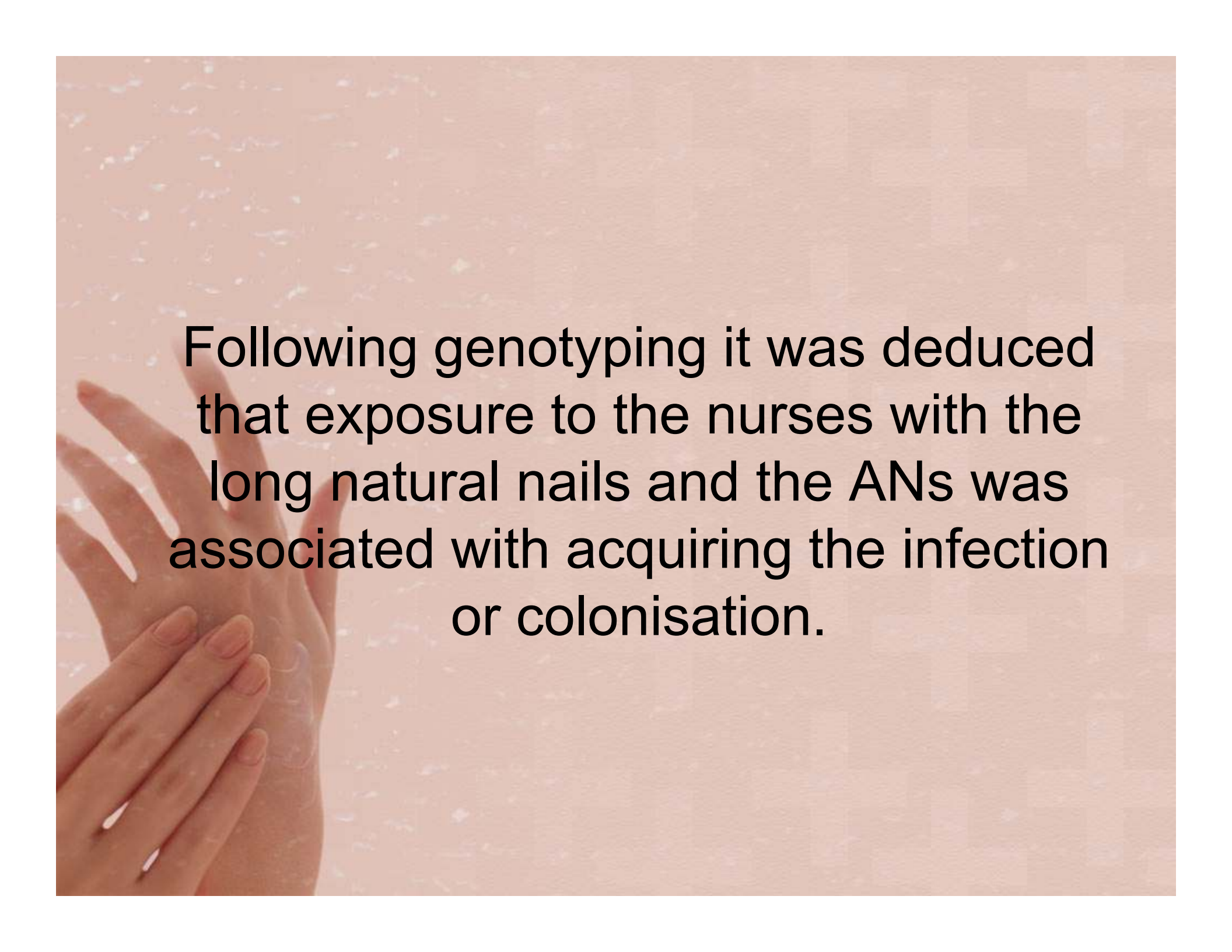




# A prolonged Outbreak of *Pseudomonas aeruginosa* in a Neonatal Intensive Care Unit: Did staff fingernails play a role in disease transmission?

Moolenaar et al. Infection control & Hospital Epidemiology. 2000;21:80-5

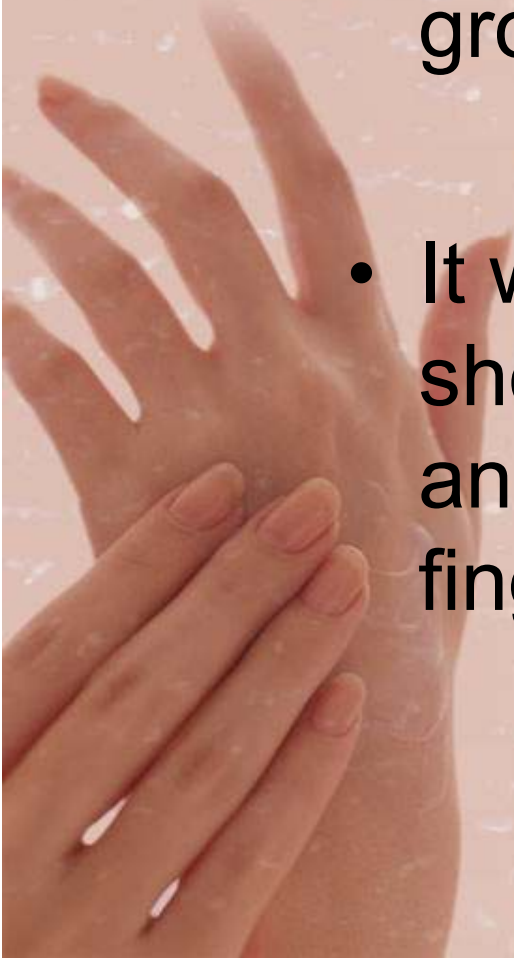
- 46 NICU patients developed either a BSI or ETT colonisation with *Pseudomonas aeruginosa*.
- 16 died, the pathogen was isolated on 3 nurses hands (one had long natural nails, 1 had ANs and 1 had short natural nails)

A close-up photograph of two hands being washed with white soap suds. The hands are positioned on the left side of the frame, with the fingers spread. The background is a soft, out-of-focus light pink or peach color. The text is overlaid on the right side of the image.

Following genotyping it was deduced that exposure to the nurses with the long natural nails and the ANs was associated with acquiring the infection or colonisation.

## Conclusion

- Neonates were identified as a group of patients at risk
- It was recommended that ANs should not be worn in the NICU and healthcare workers fingernails should be kept short



# Candida Osteomyelitis and Diskitis after spinal surgery: An outbreak that implicates artificial nail use.

Parry et al. Clinical Infectious Diseases.2001;32:352-7

- Linked 3 patients' post laminectomy deep wound infections due to *Candida albicans*,
- to one scrub nurse who had worn ANs during the 2 month period when the 3 patients had surgery.

# Conclusion

- Policies that limit the wearing of ANs by operating room staff should be enforced.

➤ Surgical patients were identified as the risk group

# A cluster of hemodialysis-related bacteremia linked to artificial fingernails.


Gordin et al . Infection Control and Hospital Epidemiology. 2007 25(3):210-15

- 5 haemodialysis patients contracted bacteraemia due to *Serratia marcescens*
- *S. marcescens* was cultured from the ANs of a nurse
- Nurse admitted to not washing her hands and using an ungloved fingernail to detach the metal lid from the heparin vial

# Conclusion

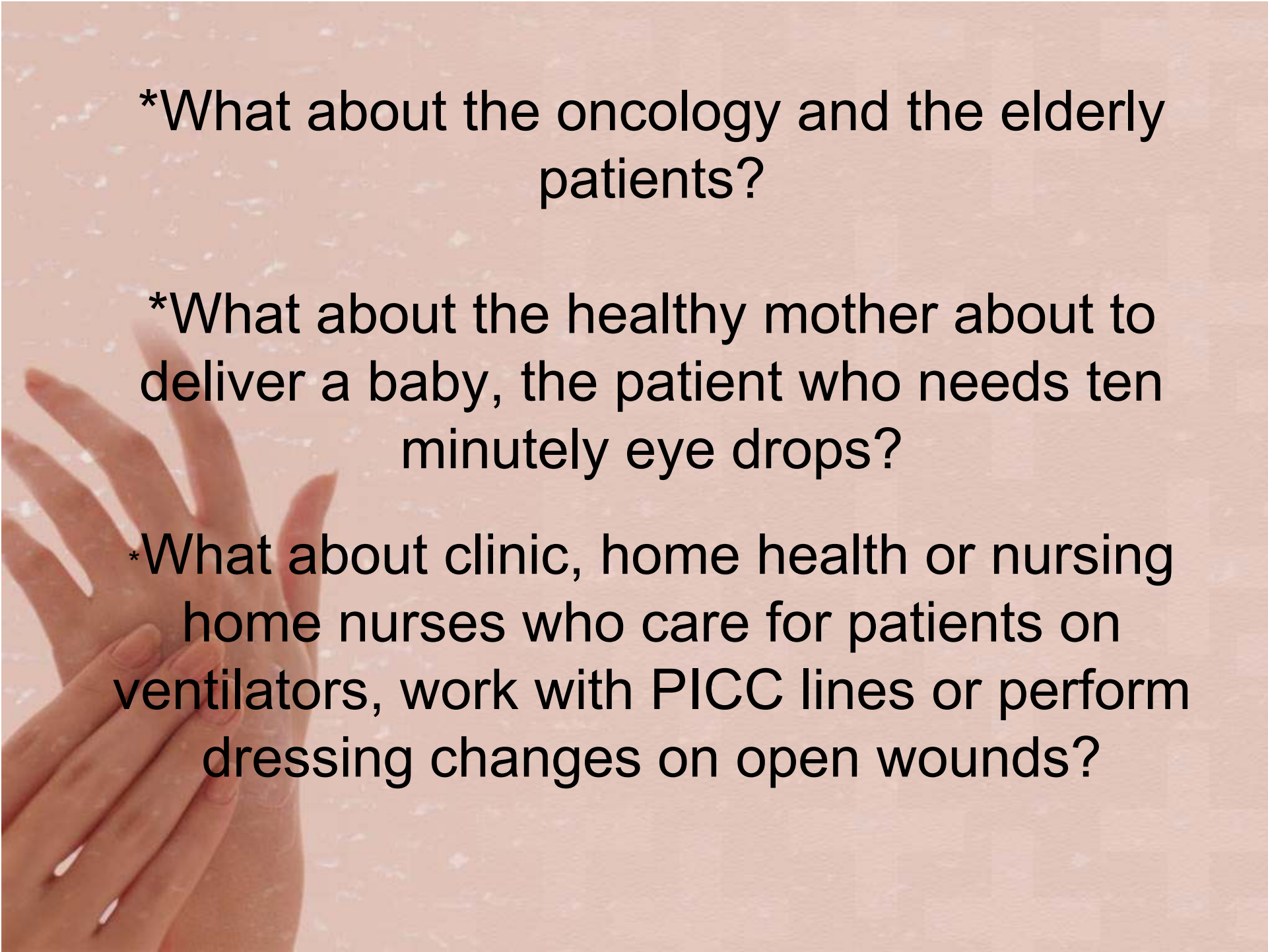
- Policies prohibiting artificial nails for healthcare workers in all haemodialysis units must be strictly enforced.

Dialysis patients were identified as a patient group at risk.



**Are all high risk patients **only** found in surgery, dialysis units, neonatal and adult intensive care units ?**

Should these policies only apply to the nurses who work in these departments?



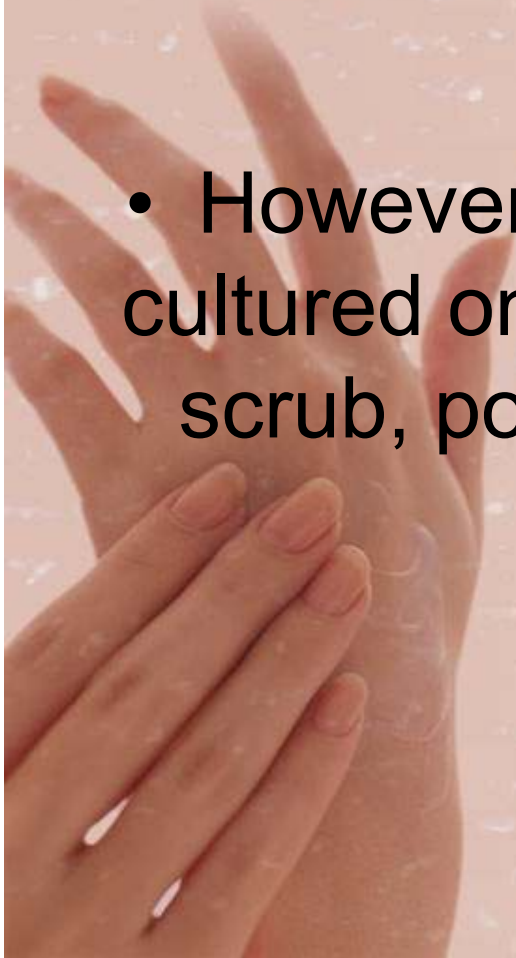
\*What about the oncology and the elderly patients?


\*What about the healthy mother about to deliver a baby, the patient who needs ten minutely eye drops?

\*What about clinic, home health or nursing home nurses who care for patients on ventilators, work with PICC lines or perform dressing changes on open wounds?

# Why must healthcare workers not wear nail varnish?

- No research found implicating the wearing of nail varnish in transmission of infection.
- However, **Ward (2007)** noted bacteria was cultured on varnished nails following a surgical scrub, polish may peel and crack during the scrubbing process



- 
- nurses with chipped nail polish had significantly more colony forming pathogens compared with fresh polish or natural nails. Hand adornment and infection control. British Journal of Nursing. (Ward 16 (11): 654 –6)

# Why shouldn't rings be worn by HCWs involved in direct patient care?

- Yildirim et al(2008) undertook a prospective study of the relationship between different types of ring and microbial hand colonisation among pediatric intensive care unit nurses. International Journal of Nursing Studies. 45(11): 1572 -6
  - 28 nurses wore plain wedding ring
  - 28 nurses wore multi-stoned rings
    - 28 nurses wore no rings



The nurses wearing rings had more

- \*Gram-negative bacteria,

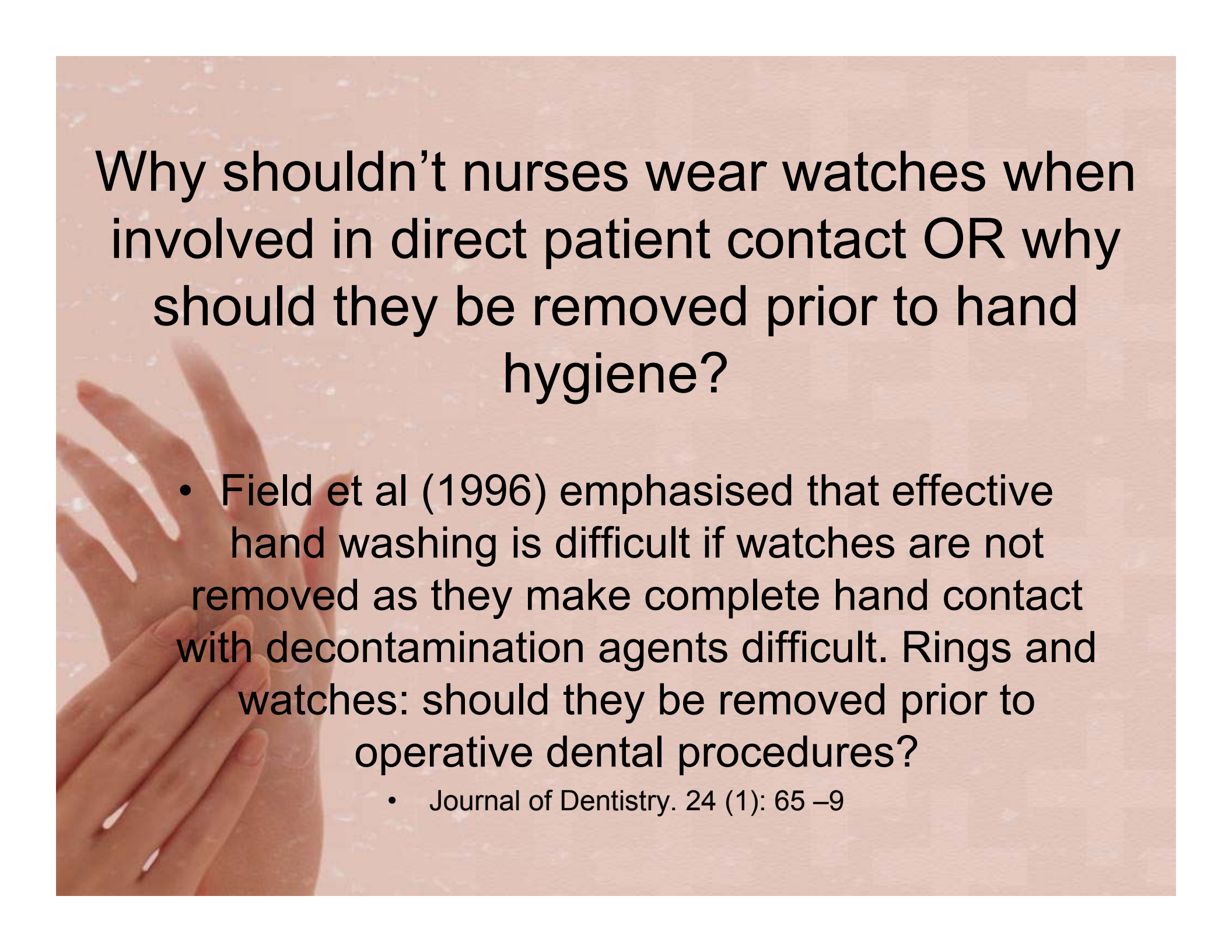
- \*Gram-positive bacteria

- \*Higher total bacterial colonisation on their hands than the nurses without rings, despite using an alcohol-based rub.

## Conclusion

- Wearing rings could increase the frequency of transmission of potential healthcare associated pathogens.





Why shouldn't nurses wear watches when involved in direct patient contact OR why should they be removed prior to hand hygiene?

- Field et al (1996) emphasised that effective hand washing is difficult if watches are not removed as they make complete hand contact with decontamination agents difficult. Rings and watches: should they be removed prior to operative dental procedures?

- Journal of Dentistry. 24 (1): 65 –9

## What is the legal position?

- With the amount of evidenced-based literature available, a nurse places herself and possibly the healthcare facility at risk legally
- when through a healthcare associated infection there is patient mortality or injury, family may want to take it further



# Evidence gathered at my workplace.

- Not possible to prove our healthcare associated infections are directly associated to these practices
- Aim: Demonstrate in some visual way, to highlight why the directives are in place
- Staff were approached to participate in a evidence gathering exercise
- Swabs taken before and after hand hygiene of artificial nails, rings, and watch.

Finger print of hand with artificial nails before  
hand hygiene:



Finger print of hand with artificial nails after hand hygiene.



# Subungual area of artificial nail before hand hygiene



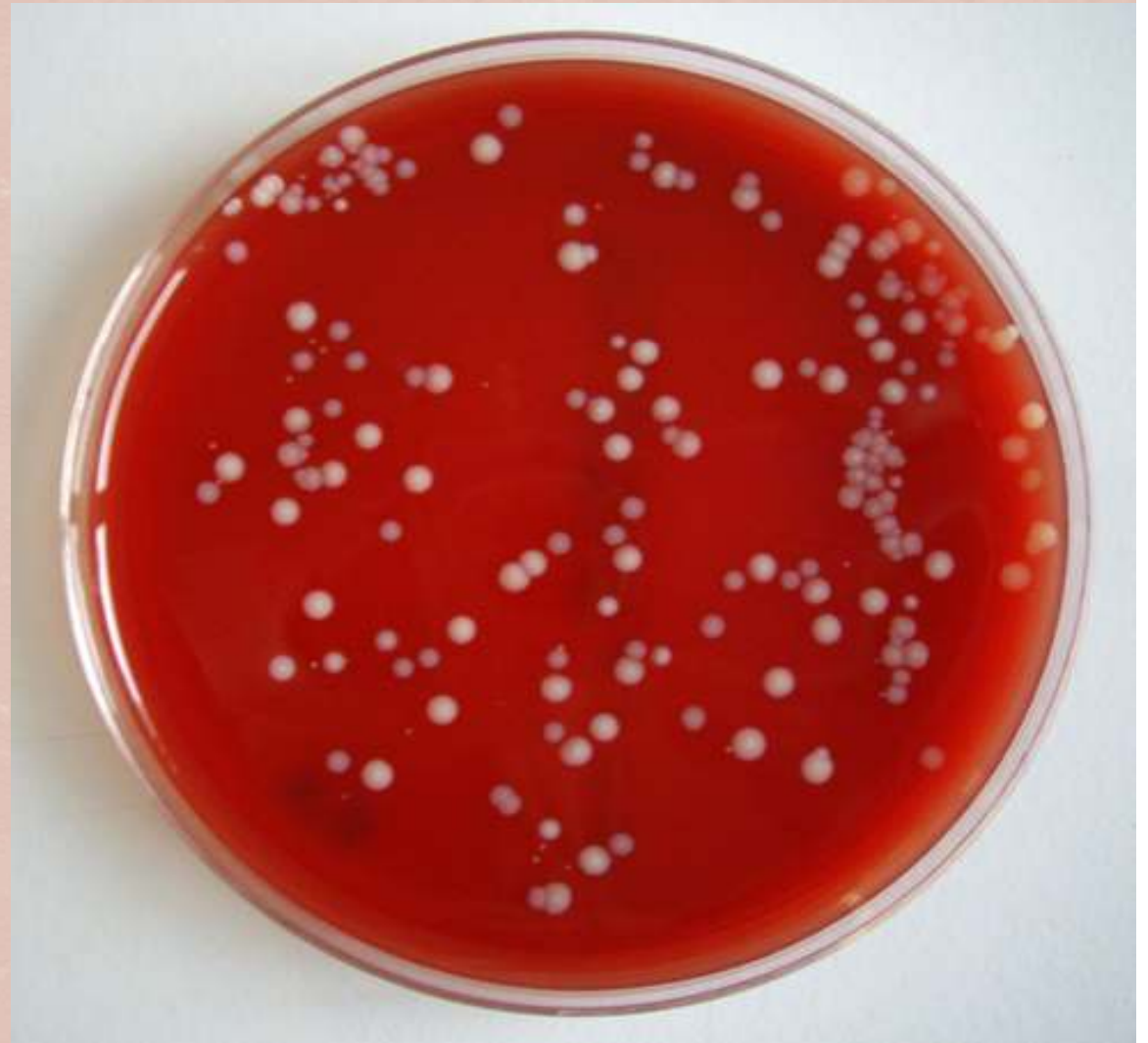
Subungual area of artificial nail after hand hygiene



Multi-stoned ring before hand hygiene



Multi-stoned ring after hand hygiene



Wrist watch before hand hygiene



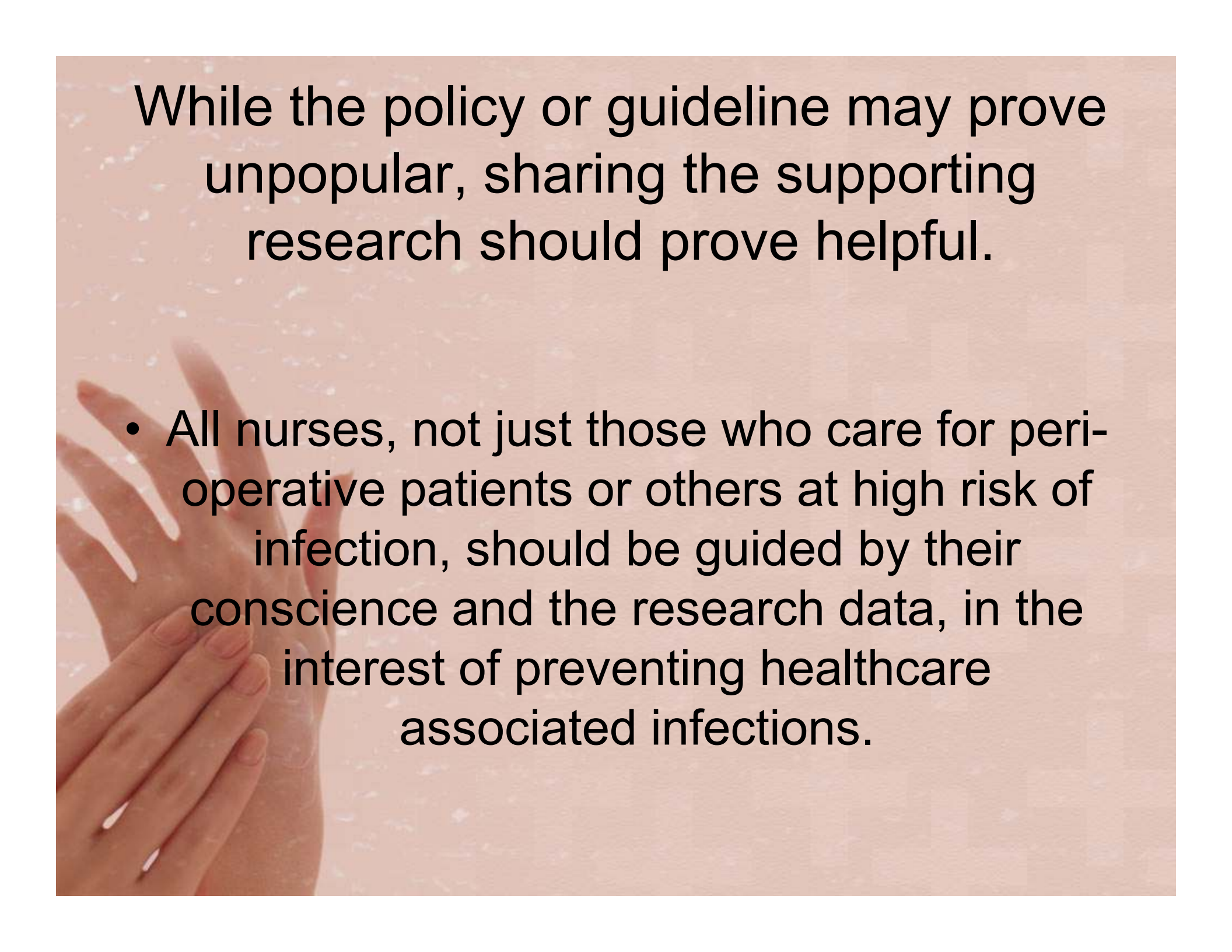
Wrist watch after hand hygiene



## Conclusion

- World Health Organization guidelines on hand hygiene state that wearing artificial acrylic nails can contribute to hands remaining contaminated with pathogens after use of soap and water or alcohol-based hand gels.





While the policy or guideline may prove unpopular, sharing the supporting research should prove helpful.

- All nurses, not just those who care for peri-operative patients or others at high risk of infection, should be guided by their conscience and the research data, in the interest of preventing healthcare associated infections.



Thank you

Any questions?