Nailed it… or not?

Kaye Bellis[1], Pauline Bass[1], Andrew Stewardson[1,2], Allen C Cheng[1,2]

1.Infection Prevention and Epidemiology Unit, 2. Infectious Diseases Department, Alfred Health

Introduction:
Ensuring clinical staff follow local policy regarding the use of nail polish is often put in the "too hard basket". It frequently lies in "no man's" land as to who should follow staff up.

Method:
Few recent publications exist about nail polish in clinical areas and even less regarding new nail products/techniques that are worn for longer periods. Little evidence or guidance is available about these newer products and the risk of possible transmission of microorganisms from healthcare workers nails to patients and their ability to withstand alcohol based hand rub (ABHR) and/or frequent hand washing.

We developed a voluntary snapshot questionnaire to determine if there was an issue with staff at our health service wearing nail products. In addition to age, gender and occupation, the questionnaire addresses healthcare worker (HCW) practices regarding nail products and their opinions about how this related to infection prevention. The questionnaire was sent via email to all hand hygiene auditors (163) to disseminate amongst their colleagues.

What's what:

Shellac	Acrylics	Gels	SNS
Half nail polish, half gel. Applied similarly to nail polish. Advantages Thin and strong is both flexible /durable. Natural look lasts up to 14 days. Main benefit is reduced chipping. Disadvantages Does not strengthen or lengthen nails. Requires UV lights to bond it. Is only sold to licensed professionals. Removal technique requires acetone . Cannot apply, repair or remove it at home. Requires a healthy nail bed.	Fake nails placed over natural ones to match the shape or to extend them. Long term can weaken the natural nail. Are a combination of liquid monomer and powder polymer. Creates a hard protective layer. Advantages A perfect canvas for applying nail colour. Are hard and very robust. They last longer. Easy removal. Can be fixed at home. Disadvantages Can damage nail bed. Look less natural than gel nails. Application involves chemicals and fumes.	Requires 3 coats each to be cured by UV light. Match the shape of the nail, or to extend it. Long term can potentially weaken natural nails. Advantages Natural, glossy, freshly-manicured look. Lasts up to 14 days. Curing time is faster. More flexible. Easier to remove. Mixtures lack the fumes associated with acrylic nails. Disadvantages More expensive. Self-fixing a break at home is complicated. Removal can result in nails damage especially if used frequently.	Nail dipping system that uses a brush-on gel base which is then dipped in a powder. The powder lends strength to the nails, consists of organically processed chemicals Benzoyl Peroxide, Titatum Dioxide, Acrylic Ester Polymer. Advantages More durable/flexible than acrylics, is the "healthy" alternative to acrylics doesn't require UV lights to bond it. Lasts up to 14 days. Disadvantages To remove, the first step is to sand off the Gel Top then nails are soaked in acetone for 10 minutes and then wiped off with a paper towel.

Responses:
We received 45 questionnaires**.**
Note: not all returned forms were complete.

- Ages ranged from 23 to 56 years (1"old"& 1"how dare you")
- 39 females, 3 males, 3 not stated
- 18 RN's
- 10 ED RN's
- 5 ICU RN's
- 1 Medical officer
- 6 pathology collectors
- 1 radiographer
- 1 ward clerk
- 3 nil disclosures

Results section 1: Tick box answers
1.Was the HCW wearing, nail polish, Shellac, SNS or acrylic nails. If yes, was it chipped or intact

- 16 (35.5%) HCWs had intact nail polish
- 11 (24.4%) HCWs had intact Shellac®
- 5 (11.1%) HCWs had SNS
- 9 (20.0%) HCWs had acrylics
- 3 (6.6%) HCWs admitted to chipped nail polish
- 1 no answer

2.How often does the HCW get the nail polish/shellac/SNS/gel or acrylics applied : (Routinely/Special occasion/First time)

- 16 (35.5%) HCWs routinely get their nails done
- 14 (31.1%) HCWs only on special occasions
- 3 (6.6 %) HCWs stated it was their first time
- 12 (26.6%) no answer

3.Was the HCW wearing rings: (How many rings in total? How many fingers have rings? How many are "stoned" rings?)

- 29 (64.4%) HCWs wore 61 rings
- 21 (72.4%) HCWs of the 29 wore multiple rings, on 44 fingers in total
- 33 (54.1%) of the 61 rings have stones

4.Was the HCW wearing bracelets (One only/Multiple/Religious)

- 11 (24.4%) HCWs wore bracelets (only 2 were religious)
- 34 (75.5%) HCWs did not wear any brackets

5.Was the HCW wearing a wrist watch? (Yes/No)

- 22 (48.0%) HCWs wore wrist watches
- 23 (51.1%) HCWs did not wear a wrist watch

Results section 2: Attitudes/ likert scale

1. How strongly do you feel about being able to wear acrylic or painted nails (including Shellac, SNS) in clinical areas?				
1(not fussed)	2	3	4	5(very passionate)
17 (37.7)	5 (11.1%)	5 (11.1%)	8 (17.7%)	10 (22.2%)
2. If there was evidence that wearing acrylic or painted nails (including Shellac, SNS ,Gel) in clinical areas increased the risk of transmission of infection would this affect your current practice?				
1(not at all)	2	3	4	5(most definitely)
8 (17.7%)	5 (11.1%)	12 (26.8%)	5 (11.1%)	**15 (33.3%)**
3. How strongly do you feel about being able to wear jewellery (other than a flat ring) in clinical areas?				
1(not fussed)	2	3	4	5(very passionate)
17 (37.7%)	4 (8.8%)	9 (20.0%)	8 (17.7%)	7 (15.5%)
4. If there was evidence that wearing jewellery (other than a flat band) in clinical areas increased the risk of transmission of infection would this affect your current practice?				
1(not at all)	2	3	4	5(most definitely)
9 (20.0%)	4 (8.8%)	10 (22.2%)	7 (15.5%)	**15 (33.3%)**
5. Would you be interested in participating in a study to look at the effects of painted and /or acrylic nails and the wearing of jewellery on the efficacy of hand hygiene?				
Yes		No		Maybe
9 (20.0%)		**28 (62.2%)**		8 (17.7%)

Conclusion:
Although our current guideline recommends against the use of nail polish, artificial nails and hand jewellery, we found a high prevalence of nail products, rings, bracelets and wrist watches being worn in clinical areas.
The available data suggests a significant proportion felt strongly that nail products should be permitted in clinical settings but some may be amenable to evidence that products may lead to transmission of infection. While some nail products have been implicated as a potential source of outbreaks, it is less clear whether this risk is significant with more modern products.
Further study of the durability and integrity of these nail products when exposed to ABHRs and frequent hand washing in the clinical setting is required.

Limitations:
An unknown denominator as we are unsure how many questionnaires auditors gave out and some returned forms were incomplete.