

Adopting an alcohol-free hand rub into clinical practice

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Improvement Issue and Context

With up to 40% of healthcare associated infection (HCAI) attributed to cross infection via healthcare worker hands, ¹ effective hand hygiene plays an essential role in infection prevention and control (IP&C).

Alcohol hand rubs at concentrations of 60-70% ethanol / isopropyl alcohol are popular, however they are by no means risk free ^{2,3} and problems with these rubs may include:

- Skin stickiness / tackiness after use
- The need to wash hands after several applications to remove emollient build-up from the skin
- Adverse skin reactions (xerosis / occupational dermatitis)
- Limited staff compliance with hand hygiene protocols
- Damage to facilities (paint / plastics / fabrics etc.) where alcohol rubs splash / drip during use
- Limited virucidal efficacy ⁴
- Toxicity if ingested (intentionally or unintentionally) ³

To overcome the above issues the Alder Hey IP&C team wanted to implement an alcohol-free hand rub throughout the new hospital which is currently undergoing construction and will be completed in 2015.

Selecting a suitable hand hygiene product which is accepted by staff is key to the success of any hand hygiene protocol. This fact is recognised by the World Health Organisation (WHO) whose guidelines on Hand Hygiene in Healthcare state the following:

'To achieve a high rate of hand hygiene adherence, healthcare workers need acceptable hand hygiene products. The selection of hand hygiene products is a key component of hand hygiene promotion, and at the same time a difficult task. The major determinants for product selection are antimicrobial profile, user acceptance, and cost.'

'The antimicrobial efficacy of hand hygiene agents is provided by in vitro and in vivo studies which are reproducible and can be generalized. Pilot studies aiming to help select products at a local level should mainly concentrate on tolerance and user acceptability issues' ⁴

The improvement issue was to identify and evaluate a suitable alcohol-free hand rub for use within the new build at Alder Hey.

Methods and Measurement

In April / May 2013 the Alder Hey IP&C team identified TECcare® PROTECT as a potential replacement for their existing alcohol based hand rubs. TECcare® PROTECT (see Figure 1) meets the NICE definition for hand rubs by having EN1500 certification.⁵ In addition it is a water based, non-toxic, non-irritant, alcohol-free, broad spectrum bactericidal, virucidal and fungicidal hand rub which offers prolonged antimicrobial protection for the skin and simultaneously sanitises and moisturises the skin during use.

A structured product evaluation took place across HDU and Cardiology where all staff were issued with individual 50ml bottles to determine user acceptance of the new product.

Staff feedback took place via structured questionnaires which were returned after the four week evaluation period. In addition the IP&C team monitored product usage over four weeks to determine product suitability for the new build when it opens.



Figure 1.
TECcare® PROTECT

Evidence of Improvement

During the evaluation use of the 50ml bottles was high and staff had a clear preference for the water based product over existing alcohol rubs. A total of 47 questionnaires were completed by staff at the end of the evaluation period. Feedback from staff was overwhelmingly positive in favour of TECcare® PROTECT (see Table 1).

Table 1. Comparison of TECcare® PROTECT vs. alcohol rubs.

Question	Preferred Hand Hygiene Product		
	TECcare® PROTECT	Alcohol	No View
Which product do you feel is most effective?	30 (64%)	7 (15%)	10 (21%)
Which product is kindest on your skin?	34 (72%)	4 (9%)	9 (19%)
Which product do you prefer using?	32 (68%)	7 (15%)	8 (17%)
Which product is easiest to use?	26 (55%)	7 (15%)	14 (30%)
Which is your product of choice?	31 (66%)	5 (11%)	11 (23%)

In addition to the feedback reported in Table 1;

- 72% of staff stated that when using PROTECT they were 'more likely' or 'much more likely' to comply with the five moments for hand hygiene
- 74% of staff reported that their overall view of PROTECT was 'good' or 'very good'
- 85% of staff reported ease of use for PROTECT as 'good / very good'
- 74% of staff reported that PROTECT felt 'good / very good' on their skin
- 85% of staff stated that the drying time required for PROTECT was 'good / very good'

Overall, more than half of all staff returning questionnaires wanted to see PROTECT replace all alcohol based hand rubs in the hospital once the evaluation had finished. Staff feedback was so positive that June 2013 saw Trust-wide adoption of PROTECT with all staff now using the individual 50ml bottles. Over 9,000 bottles have been used by Trust staff in the past twelve months.

Staff continue to be particularly impressed with how the product feels on their hands and the fact it leaves no tackiness or residue on their skin.

Future Steps

This structured product evaluation aligns itself well with WHO guidance which recommends hand rub product selection at a local level should concentrate on tolerance and user acceptability issues. ⁴

This work clearly demonstrates that both tolerance and user acceptance of TECcare® PROTECT was extremely high compared to the existing alcohol based hand rubs already in use. Of significant importance is the finding that over 70% of staff were more likely to comply with the five moments for hand hygiene when using TECcare® PROTECT in place of alcohol hand rubs. Staff concordance with hand hygiene protocols is an ongoing battle for any IP&C team therefore any intervention likely to improve staff concordance is of significant interest. This finding is further re-enforced when looking at the number of bottles used in the past twelve months. Staff would not have used over 9,000 bottles of the water based hand rub if it was not well liked. This affinity for the new product is likely to result in increased concordance with hand hygiene protocols which can only benefit patients, staff and visitors to the hospital.

Adopting any new product into clinical practice is typically accompanied by two questions: (i) will it work? and (ii) will the staff like / accept it? Stakeholders considering the adoption of TECcare® PROTECT can be confident that it will perform to known in-vitro test standards (EN1500) whilst simultaneously being very well received by staff.

Switching to a broad spectrum, water based, alcohol-free hand sanitizer has immediate benefits to the hospital as it overcomes the key risks and problems associated with alcohol based hand rubs mentioned at the start of this poster.

Due to its popularity with staff, its broad-spectrum antimicrobial efficacy and the prolonged antimicrobial effect it has on the skin the IP&C team at Alder Hey will be installing TECcare® PROTECT as their hand sanitizer of choice throughout all areas of the new hospital once the building is complete in 2015.

References

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