

# Health Technology Assessment

## The provision of alcohol hand gel to improve compliance with hand hygiene and reduce the incidence of healthcare associated infections.

### Background

It is widely accepted that good hand hygiene practices are important in reducing the incidence of healthcare associated infection (HAI) (Larson 1988). Guidelines and standards relating to infection control have reflected this by including detailed guidance on when, in the course of clinical care, hands require to be washed or decontaminated in order to reduce the risk of cross-infection.

It has also been documented that compliance with guidelines and recommendations on hand hygiene has been unsatisfactory and as a result a range of initiatives to improve compliance with hand hygiene have been introduced in a variety of healthcare settings (Pittet & Boyce 2001). The use of alcohol gel as an alternative, in some clinical situations, to hand washing with soap and water has been given some credence following the publication of the results of a study conducted in Geneva which showed sustainable improvement in compliance with hand hygiene and an associated reduction in HAI rate (Pittet et al. 2000). The intervention in this study included provision of alcohol hand rub. A number of other studies of the use of alcohol hand gel for hand hygiene have been published indicating similar results.

Although we are aware that alcohol hand gel is used in Scottish hospitals at present, it is unknown how widely available this product is across the country, in what clinical areas it is provided and in what form of dispenser it is available. It is also unknown what brands of product are being used and the relative effectiveness of these products in achieving compliance, and who has access to alcohol hand gel.

The National Patient Safety Agency (NPSA) has funded the introduction of a hand hygiene promotional initiative the 'cleanyourhands' campaign in 6 pilot areas in England (<http://www.npsa.nhs.uk/cyh/background.jsp>). This includes provision of bedside and personal supplies of alcohol hand gel, the use of promotional posters and patient involvement initiatives. An economic evaluation of the results from these pilot sites has been carried out by the Department of Health and a draft of the findings of this has been made available to us. In addition, a simple economic evaluation of the findings of the Geneva study is also available. It is clear from both of these studies that an increase in hand hygiene compliance by provision of alcohol gel which results in even a small reduction in HAI are cost effective.

Any economic evaluation of interventions to improved hand hygiene with the intention to reduce HAI rates requires data on the prevalence of HAI, the cost of HAI, the effectiveness of the intervention to reduce infection rates and some measure of the benefit of infections avoided. The assumptions included in the data used in the NPSA

economic evaluation are those which would be used in any similar evaluation conducted for the Scottish patient population as there is not suitable alternative data sources.

Given that there is a paucity of data to conduct an economic evaluation for the use of alcohol hand gel to improve hand hygiene in Scottish healthcare settings, the proposal is to critically appraise the existing literature on clinical effectiveness of alcohol hand gels to improve hand hygiene compliance, and to critically appraise the existing economic evaluations. A survey of current usage of alcohol hand gels in Scotland will be conducted to inform the budget impact of any recommendations following this review of the literature to be determined.

## **Methodology**

### ***Survey of current hand hygiene facilities and interventions***

A survey will be conducted of facilities for hand hygiene in acute (? and primary care) NHS hospitals. This will include questions relating to the provision of alcohol hand gels. In addition, infection control teams will be surveyed to determine if local audit data are available on hand hygiene compliance, the role of patients in encouraging hand hygiene compliance, prevalence of infection, availability of education and training in hand hygiene and local policies and procedures. This will provide for NHSScotland a detailed picture of how hand hygiene issues are being approached across the country.

### ***Review of clinical effectiveness***

A literature search will be conducted to identify studies where the use of alcohol hand products on hand hygiene compliance and/or associated infection rates has been evaluated. Information relating to the tolerance of healthcare workers to alcohol gel compared to other hand hygiene products will also be considered. It is anticipated that the majority of these studies will have been published in recent years. It is not the intention to attempt to conduct a meta-analysis of such studies as initial impressions are that the majority of such reports are of small studies or of poor quality. A narrative review should however provide sufficient information to determine if the assumptions made in existing economic models are justified.

### ***Review of economic evaluations***

Critical appraisal of the previously identified economic evaluations will be carried out in light of the findings of the review of clinical effectiveness and the publications from which assumptions for the models are drawn. It will be determined from this process whether the findings of these economic evaluations are valid for healthcare in Scotland. In addition, a further literature search will be required to determine if other similar economic evaluations have been published. It is anticipated that the findings

from these economic evaluations can be used to develop recommendations for NHSScotland regarding the use of alcohol hand gel.

### ***Budget impact***

Should the findings of the survey and review of clinical and cost effectiveness indicate that the health service in Scotland should increase the current provision of alcohol hand gel, the costs of this provision to the health service will be determined.

### ***References***

#### References

Larson, E. 1988, "A causal link between handwashing and risk of infection? Examination of the evidence", *Infection Control*, vol. 9, no. 1, pp. 28-36.

Pittet, D. & Boyce, J. M. 2001, "Hand hygiene and patient care: pursuing the Semmelweis legacy", *The Lancet Infectious Diseases* no. April, pp. 9-20.

Pittet, D., Hugonnet, S., Harbarth, S., Mourouga, P., Sauvan, V., Touveneau, S., & Perneger, T. V. 2000, "Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. Infection Control Programme.[see comment][erratum appears in Lancet 2000 Dec 23-30;356(9248):2196]", *Lancet*, vol. 356, no. 9238, pp. 1307-1312.

**Karen Ritchie July 2004**