AS 1071:2015

Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

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- Australasian Health Infrastructure Alliance
- Australian Chamber of Commerce and Industry
- Australian Medical Association
- Australian Nursing and Midwifery Federation
- Consumers' Federation of Australia
- Department of Defence
- Human Factors and Ergonomics Society of Australia
- Medical Technology Association of Australia
- Queensland Emergency Medicine Research Foundation
- Royal Australasian College of Physicians
- Safety Institute of Australia
- Together Queensland
- University of New South Wales

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Australian Standard®

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PREFACE

This Standard was prepared by the Standards Australia Committee SF-021, Human Factors.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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FOREWORD

Healthcare associated infections are a major and growing issue in the quality and safety of healthcare, in both the hospital and community settings. They are a major cause of morbidity and mortality around the world. The US Centers for Disease Control and Prevention (CDC) reports hospital-acquired infections cost $30 billion and lead to nearly 100 000 deaths each year. An estimated 200 000 healthcare associated infections occur each year across Australia[1].

As a result, healthcare associated infections have been nominated as a priority area by the Australian Commission on Safety and Quality in Health Care (ACSQHC). Improved healthcare worker hand hygiene is the highest priority area to reduce the risk of healthcare associated infections.

In 2005, the World Health Organization World Alliance for Patient Safety launched a campaign called 'Clean Care is Safer Care'. In 2009 the World Health Organization relaunched their campaign as 'Save Lives: Clean Your Hands'. As a result of these campaigns, ACSQHC engaged Hand Hygiene Australia to implement the National Hand Hygiene Initiative. By August 2013, the WHO's hand-hygiene programme had been implemented at more than 15 700 healthcare settings in 168 countries worldwide and more than 50 governments have based their national hand-hygiene campaigns on it[2]. Two years after implementation, all sites reported ongoing hand-hygiene activities with sustained or further improvement, including national scale-up[2].

The objectives of the National Hand Hygiene Initiative were to develop a national approach to achieve sustained improvements in hand hygiene compliance rates, and reduce the rates of healthcare associated infections. The campaign also developed an effective education and credentialing system to improve knowledge about hand hygiene and infection control and make hand hygiene and infection prevention 'core business' for all healthcare institutions and the wider Australian community.

Although the authors of a Cochrane review[3] failed to find evidence to support the effectiveness of hand hygiene interventions, they recommended that hand hygiene programs be implemented and promoted. The recommendation was not based on the narrow evidence that they assembled for effectiveness. Instead, it implicitly incorporates a much wider range of considerations, including the cost-effectiveness and acceptability of hand hygiene programs.

Research shows that less than perfect information can be used to make better decisions. While scientific studies contribute valuable information to decision making, such studies alone cannot provide answers as to how healthcare resources should be used[4].

It has been estimated that there are over 600 million hand washing events in Australian hospitals annually*. If consistency of positioning of hand hygiene products at a healthcare basin improves hand hygiene compliance, by as little as 5%, that translates to over 30 million improved hand washing events in hospitals each year.

Effective hand hygiene is recognized as the simplest way to prevent the spread of disease. Product placement is vital to improving hand hygiene compliance. Hand hygiene dispensers act as a visual cue for hand hygiene behaviour. Traore (2007)[1] concluded 'availability of a hand rub at the point of care increased hand hygiene independently of the type of product used, time of day, professional category and other confounders'.

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* If, hypothetically, 100 handwashing stations in 600 hospitals are used 30 times a day, there would be over 650 million hand washing events across Australia in a given year. This is a conservative estimate.

Birnbach et al (2010)[5] found that medical staff had 54% hand hygiene compliance when the alcohol based hand rub was in their line of sight entering a patient's room, compared to 11.5% when they could not see the alcohol based hand rub dispenser. Kampf[6] recently noted that one prerequisite for improving compliance with hand hygiene is convenient, readily accessible dispensers.

There are a number of systems that incorporate colour coding into critical features, where speed and accuracy of identification is paramount. These systems include electrical wiring, telecommunications wiring, optical fibres, traffic lights and fire extinguishers. Anesthesiologists in the United States, Australia, New Zealand, Canada, and Great Britain have adopted a colour-coding system for user-applied syringe labels for anesthetic drugs[7]. The intention is to reduce the risk of error due to accidental syringe swapping, even though evidence for the effectiveness of this strategy is limited and mixed[8,9]. The American Academy of Ophthalmology has recommended a uniform colour-coding system for the caps and labels of all topical ocular medications[10]. The Academy collaborated with the U.S. Food and Drug Administration and industry to establish this colour system in response to reports of serious adverse events resulting from patients having difficulty distinguishing between different products[10].

Unique colour coding has been shown to reduce search times significantly and greatly enhanced conspicuity for items, although it had no benefit when some distracters had the same colour as the target[11].

Observers with colour vision deficiency had longer search times and the coloured targets were less conspicuous to them compared with colour normal observers. However, unique colour coding assisted their search[11]. As there is a limited number of hand hygiene products, we should not be limited by the number of absolute identifiable colours[12].

In 2009, Queensland Emergency Medicine Research Foundation funded a research study that demonstrated that compliance with hand hygiene is directly proportional to the accessibility and availability of products to decontaminate hands. The study also showed that there was no consistency in the positioning of hand hygiene solutions relative to the basin in their healthcare setting. The study found an overall error rate of 6.2% and a hesitation rate of 5.8%[13].

This Standard hopes to standardize the placement and colour of hand hygiene materials to optimize compliance.

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[3] Gould DJ, Moralejo D, Drey N, Chudleigh JH. Interventions to improve hand hygiene compliance in patient care. *Cochrane Database Syst Rev* 2010; 8 CD005186.doi:10.1002/14651858.CD005186.pub3.

[4] Nicholas Graves, Kate Halton, et al. (2013). *Infection control and hospital epidemiology*. April 2013, vol.34, no.4. Linking Scientific Evidence and Decision Making: A Case Study of Hand Hygiene Interventions

[5] Birnbach, DJ, Nevo, I, et al. (2010). 'Patient safety begins with proper planning: a quantitative method to improve hospital design.' *Quality and Safety in Healthcare* 19 pp 462–465.

[6] Kampf G. The six golden rules to improve compliance in hand hygiene. *J Hosp Infect*. 2004; 56 (suppl 2): S3–S5.

[7] Committee D10.32 on Consumer, Pharmaceutical and Medical Packaging. ASTM D4774-06, *Standard specification for user applied drug labels in anesthesiology*. West Conshohocken (PA). ASTM International; [cited 2008 Dec. 18].

[8] Hirabayashi Y, Kawakami T, Suzuki H, Igarashi T, Saitoh K, Seo N. [The effect of coloured syringes and acoloured sheet on the incidence of syringe swaps during anesthetic management] Masui. 2005;.54(9):.pp 1060–1062.

[9] Fasting S, Gisvold SE. Adverse drug errors in anesthesia, and the impact of coloured syringe labels. Can J Anaesth. 2000;.47(11):.pp 1060–1067.

[10] Colour codes for topical ocular medications [policy statement] San Francisco (CA) American Academy of Ophthalmology; 2006. October, [cited 2008, Dec. 18].

[11] Cole et al (2004) Visual search and the conspicuity of coloured targets for colour vision normal and colour vision deficient observers. *Clin Exp Optom*. 2004; 87 4-5: pp 294-304

[12] Does Colour-Coded Labelling Reduce the Risk of Medication Errors? *Can J Hosp Pharm*. 2009. Mar-Apr; 62(2): pp 154–156.

[13] Stackelroth, J, Sinnott, M, & Shaban, RZ (2015). Hesitation and error: Does product placement in an emergency department influence hand hygiene performance?. *American journal of infection control*. (e-publicaton)

STANDARDS AUSTRALIA

Australian Standard

Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements and provides guidance on the placement and presentation of hand hygiene products for use in healthcare settings.

The Standard applies to the design, maintenance and installation of hand hygiene facilities in the patient care areas of healthcare settings. The Standard does not address or refer to designated scrub basins or surgical hand hygiene.

1.2 OBJECTIVES

The objectives of this Standard are as follows:

(a) Reduce morbidity and mortality resulting from healthcare associated infections.

(b) Save waste of solutions as a result of incorrect use.

(c) Improve hand hygiene by reducing errors in hand hygiene practices associated with correct choice and use of products.

This Standard is intended to ensure consistency in the placement of soaps, disposable towels, hand lotion, and alcohol based rubs in relation to the basin. It also standardizes the presentation of the hand hygiene materials in healthcare settings.

This Standard is intended for application by healthcare institutions and to be implemented in healthcare settings.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
2700 Colour standards for general purposes

AS/NZS
1580 Paints and related materials—Methods of test
1580.601.3 Method 601.3: Colour—Methods of colour measurement

ISO
11664 Colorimetry
11664-1 Part 1: CIE standard colorimetric observers
11664-2 Part 2: CIE standard illuminants

CIE
39-2 Recommendations for surface colours for visual signalling