



HAND HYGIENE IN THE LABORATORY

Attitudes, Beliefs And Compliance

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Introduction

With an ageing population and resultant increasing demands on healthcare, professionals worldwide have identified hand hygiene as one of the leading strategies to help combat Healthcare Associated Infections. In 2009, the World Health Organization (WHO) launched the SAVE LIVES: Clean your hands global campaign with a focus on implementation of multi-modal strategies aimed at improving and sustaining hand hygiene among doctors and nurses. Focus has since expanded to involve other healthcare workers and ancillary staff such as clerical workers and allied health professionals such as laboratory staff. Laboratory workers are at the interface with hospital outpatients and share common infrastructure with the public which puts those using its facilities at risk of infection. A simple initiative such as hand hygiene by laboratory staff can minimise the exposure of these patients to potentially dangerous and resistant organisms and reduce their potential of contributing to cross infection ¹.

With the National target set at 70% compliance² it has been documented that hand hygiene among healthcare workers is sub-optimal with research consistently demonstrating rates of compliance below 50% ³. There is little data available for hand hygiene compliance for laboratory workers and only one article of research has been identified which demonstrated 100% compliance⁴. Low rates of hand hygiene compliance among healthcare workers can be attributed to behavioural influences such as time restraints, lack of role models, knowledge deficits, understaffing and restricted access to hand hygiene products ⁵.

Method

This study was conducted in the Northern Tasmanian Pathology Service (NTPS) which operates under the auspices of the Launceston General Hospital. Hand Hygiene refers to the practice of hand cleansing with either soap/antiseptic based rinse or water or the use of an alcohol-based hand rub (ABHR). A worker is deemed compliant if they performed hand hygiene when one of the 5 moments developed by the researcher was identified. Failure to perform hand hygiene at these times was classified as a “missed” opportunity.

5 moments for hand hygiene for laboratory workers:

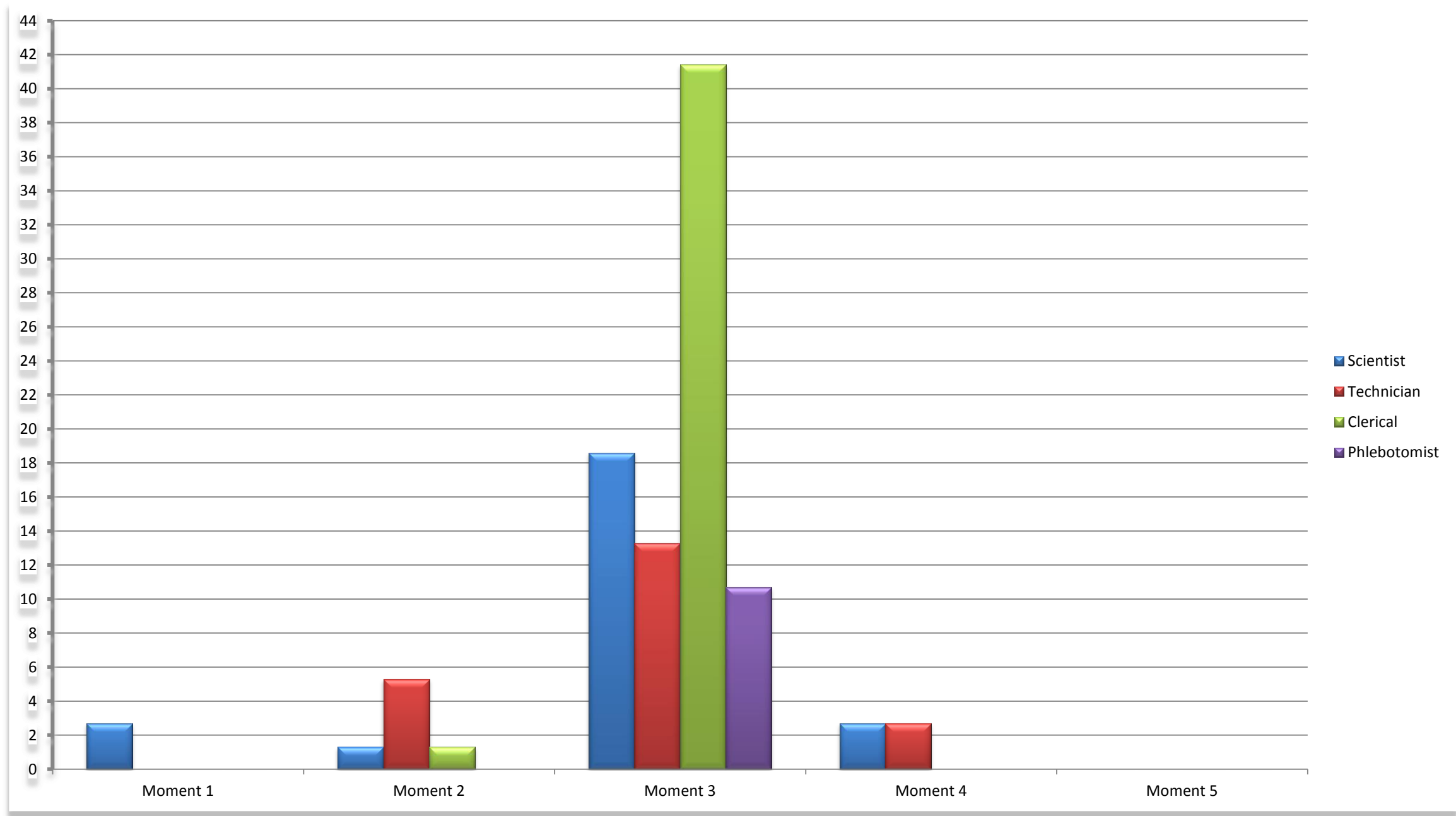
- After removing laboratory coat
- Before entering a clean area
- Before touching a clean surface
- Before leaving laboratory
- Hands visibly soiled/contaminated

Laboratory staff were observed for hand hygiene compliance over a period of 25 hours by a sole trained auditor and results were recorded on a Hand Hygiene Data Collection Form.

Participants in the study were asked to complete a questionnaire developed by the researcher which focused on Social Cognitive Theory (SCT) and Theory of Planned Behaviour (TPB). The aim of the questionnaire was to determine participant demographics and assess their awareness, beliefs and attitudes with regard to hand hygiene. The questionnaires were graded on a 5 point Likert scale and subjected to chi square analysis to determine the existence of relationships between the variables.

Study participants were asked to attend Focus Group Discussions centred on individual’s attitudes and beliefs with regard to hand hygiene and taking into consideration hand hygiene training and laboratory structure. Discussions were recorded and transcribed verbatim and subjected to Thematic Analysis.

Figure 1. Hand Hygiene missed moments according to professional category and moment missed.



Limitations

As this study was undertaken by a sole researcher who was known to the staff the influence of the Hawthorne Effect was unavoidable and possibly impacted on elevating compliance rates. The questionnaires provided may be subject to social desirability influences and as a consequence participants may have over reported their compliance, behaviours and knowledge in order to generate pleasing results.

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Research Findings

A total of 54 laboratory staff were invited to participate in the research project with an achieved participation rate of 85%. Of the 46 participants retained in the study, 70% were female and 30% were male. The sample set comprised 43% scientists, 24% technicians, 24% clerical staff and 9% phlebotomy staff.

During the observational stage, 239 hand hygiene moments were identified. During this time, 75 “missed” hand hygiene moments were identified resulting in an overall compliance rate of 68.6% which is just below the national target of 70%⁶. Analysis shows that the most frequently observed hand hygiene moments during the study involved Moment 4 (Before leaving the laboratory). The most observed “missed” hand hygiene moment was Moment 3 (Before touching a clean surface). Analysis shows that of all the demographics collected for the observational stage that the participant’s age had the greatest influence on compliance rates. Participants <30 years of age showed an increased risk for non-compliance for hand hygiene with the association being due to more than just chance as shown in Table 1. Clerical staff had the highest rate of missed hand hygiene moments comprising almost 50% of the total missed moments, The most repeatedly missed hand hygiene moment was Moment 3 (Before touching a clean surface) by all four professional categories with the majority (41%) being undertaken by clerical staff.

Focus group discussions achieved 82% participation rate and thematic analysis showed that participants learnt a substantial amount of their hand hygiene practices at the workplace which reinforced their “hand washing” practices as a child and that their main role in hand hygiene was to stop the spread of harmful organisms. They did however believe that “mentorship and training” were absent for new office employees who have no background in a laboratory setting and that “more emphasis” could be placed on hand hygiene training and understanding to enable improved compliance with these employees. Participants also believed the structural layout of the laboratory was impacting on hand hygiene compliance and that mandatory online training was not applicable for laboratory staff. They also stated that hand hygiene auditing would “stimulate awareness” and “improve compliance”.

Focus group discussions found that self-protection was a major driver for hand hygiene motivation for laboratory workers and this correlated well with observational data which showed that staff leaving the laboratory demonstrated 96% compliance with hand hygiene. Questionnaire outcomes correlated well with observational data however participants perceived their compliance to be better than was actually observed.

This study supported the proposition of SCT as staff perceived their colleagues as role models, mentors or immortal teachers. The study showed the laboratory demonstrated a strong culture of hand hygiene with the importance being shared by the staff and the laboratory manager.

Table 1. Comparison of hand hygiene compliance and non-compliance

	Compliance %	Non-compliance %	P value
Gender			
Male	64	36	X ² (1, n=97)=1.53, p=0.22
Female	72	28	X ² (1, n=142)=0.82, p=0.37
Profession			
Scientist	80	20	X ² (3, n=93)=5.0, p=0.17
Technician	79	21	X ² (3, n=76)=3.9, p=0.27
Clerical	38	62	X ² (3, n=52)=23.1, p=3.8
Phlebotomist	56	44	X ² (3, n=18)=0.99, p=0.80
Age			
<30	85	15	X ² (1, n=52)=5.78, p=0.02
≥30	64	36	X ² (1, n=187)=1.58, p=0.21 Figure 3. Hand Hygiene missed moments according to professional category and moment missed.

Conclusion

Hand hygiene compliance rates for laboratory staff are currently just below national target levels and this study has demonstrated that minimal impact through education and training would raise levels to an acceptable standard. Results indicate that the most frequently missed moments for hand hygiene were associated with the clean areas of the laboratory and it is feasible to conclude that this is partly due to the structural layout of the laboratory.

Laboratory staff have a thorough understanding of the need for hand hygiene and its impact on the hospital. There is an obvious lack of detail surrounding the education and monitoring of hand hygiene for staff in this department and there is evidence that additional focus would not be in vain.

References

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