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Clean hands save lives



Hand Hygiene Compliance Report August 2008

This document provides information on the current status of hand hygiene practices in NSW in July 2008 in comparison to the Clean Hands Save Lives Campaign Hand Hygiene Compliance data conducted in New South Wales between February 2006 and February 2007.

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Executive Summary

Hand hygiene is well recognised as the single most important strategy to reduce the spread of harmful infectious agents to patients in hospitals. This issue is one with which every jurisdiction in Australia and indeed internationally, are grappling with. There is currently developmental work underway at a national level through the Australian Commission on Safety and Quality to introduce national benchmarks and comparative audits of hand hygiene compliance.

During 2006 – 2007 the Clinical Excellence Commission in partnership with the NSW Health Department conducted a statewide campaign to improve compliance with hand hygiene. By way of identifying the current status of hand hygiene practices in NSW in comparison to the Clean Hands Save Lives Campaign Hand Hygiene Compliance data conducted in New South Wales between February 2006 and February 2007, The Clinical Excellence Commission requested each Area Health Service to conduct Hand Hygiene Compliance Audits in July 2008.

Overt observation results from July 2008 showed a decline in hand hygiene compliance across NSW since the completion of the Clean Hands Save Lives Campaign (February 2007 – 62.2%; July 2008 – 57.9%).

Doctors, Allied Health and Other Staff groups all showed a decline in hand hygiene compliance before patient contact, and all professional groups demonstrated a decrease in hand hygiene compliance after patient contact.

Notably, of all professional groups, doctors showed the lowest hand hygiene compliance (38.9%) in this data collection period. Nursing staff reported 65.3% hand hygiene compliance.

Since the campaign ended, few Area Health Services continued to apply all the strategies employed during the campaign. Those AHS which did continue to audit hand hygiene compliance have shown continued improvement. Overall, however compliance with hand hygiene in NSW is not at a level which the general patient population would find acceptable.

Introduction

The importance of hand hygiene as the single most important strategy to reduce the burden of infection with multi-resistant organisms in modern hospitals is undisputed.

Better application and adherence to infection control programs, policies and procedures has been shown to reduce the spread of Healthcare Associated Infections (HAIs). Changes introduced as part of the Clean Hands Save Lives Campaign, implemented by the Clinical Excellence Commission (CEC) between February 2006 and February 2007, were designed to assist implementation of existing evidence based guidelines, and aid health care facilities to address identified problems and barriers associated with current local hand hygiene activities.

To identify current hand hygiene practices since the campaign ended The Clinical Excellence Commission requested each Area Health Service to conduct Hand Hygiene Compliance Audits in July 2008.

Methodology

The methodology employed in this compliance audit was similar to that employed in the Clean Hands Save Lives Campaign of 2006-2007. All Area Health Services were provided with electronic copies of the audit tools and instructions to conduct overt observation audits in the month of July 2008.

The overt observation tool allowed staff to record over a *20-minute* period whether healthcare workers who touched patients had adequately decontaminated their hands before and after patient care. The tool also differentiated between high, medium or low risk for infection transfer.

Infection Risk Categories were defined as:

- *Low risk activities* – touching sterile goods, making clean bed, contact with patient notes, telephone, computer and medication round.
- *Medium risk activities* – stripping a non-soiled bed, patient contact such as hand shake, manipulating medical devices in immediate patient environment, helping to move patient in/out of bed, cleaning beds and/or furniture, observations (TPR & BP), setting up & removing IVI, giving injections, donning and removing gloves, bed bath and washing patients.
- *High risk activities* – dealing with bodily secretions (urine, faeces, blood) eg catheter bags, suctioning, tracheostomy care, wound dressings, phlebotomy, cannulation, various procedures conducted on same patient and attending a MRO patient

The tool provided examples of opportunities for high, medium and low risk. All hand hygiene opportunities were to include hand washing or use of alcohol rub both before and after patient contact.

A healthcare worker decontaminating their hands immediately after attending a patient and then directly attending another patient, without touching any object (including medical notes, telephone, computer keyboard, monitor, curtain etc) or any other patient would be considered to have conducted hand hygiene before patient contact.

The feedback form summarised the findings from the observational tool and compared hand hygiene opportunities (Opp) with actual observed hand hygiene (HH Obs). Compliance was expressed as a percentage.

Compliance can be defined as either washing hands with soap and water or using an alcohol-based hand rub in accordance with a hand hygiene opportunity.

$$\text{Compliance} = \frac{\text{Hand Hygiene Observed (HH Obs)}}{\text{Hand Hygiene Opportunity (Opp)}} \times 100 = \text{compliance \%}$$

It was noted that the methods used to observe healthcare workers hand hygiene compliance would be overt not covert observations and while undoubtedly resulting in a 'Hawthorne Effect' would provide an additional hand hygiene learning opportunity. All observational periods were to use this method comparing compliance rates with similar biases.

Overt Observations were recorded for before and after patient contact, by professional groups and by infection risk categories.

Professional groups included:

- Nurses – Registered Nurses, Enrolled Nurses, Assistants in Nursing, Nurse Managers, Clinical Nurse Educators, Clinical Nurse Consultants, Clinical Nurse Specialists
- Doctors – Visiting Medical Officers, Consultants, Registrars, Junior Medical Officers, Residents, Interns, Medical Students
- Allied Health – Physiotherapists, Occupational Therapists, Dieticians, Social Workers
- Other Staff – Environmental Services, Hotel Services, Security, Pastoral Care

The sample size for the July 2008 data collection period was identical to that of the data collected between February 2006 and February 2007. The table below describes the minimum sample for each data collection period.

Facility Group	No of Wards	No of observations per ward	Total 20-min observations to be collected
One health facility from Group One	3	4	12
One health facility from Group Two	3	3	9
One health facility from Group Three	2	2	4

Table 9 – Minimum Overt Observation Sample

Area Health Services were required to collect the hand hygiene compliance data within a four-week period, with submissions to be received by the CEC by 1st August 2008.

Results

All Area Health Services conducted overt observations in July 2008. Table 1 (Hand Hygiene Opportunities) shows the total number of hand hygiene opportunities in each data collection period and the proportion of nurses, doctors, allied health and other staff observed. The proportions of staff groups captured during the sequential data collection periods remained relatively constant indicating an appropriate comparison can be made between the data collection periods.

This table clearly shows nurses have the greatest opportunity for patient contact and conducting hand hygiene, compared with doctors, allied health and other staff. However, doctors, allied health and other staff are more mobile throughout the hospital, suggesting greater ease of spreading infections.

Hand Hygiene Opportunities					
	Total	Nurses	Doctors	Allied Health	Other Staff
Pre Campaign	8,057	5,213 (64.7%)	1,408 (17.5%)	728 (9.0%)	708 (8.8%)
August 2006	7,229	4,383 (60.6%)	1,394 (19.3%)	770 (10.7%)	682 (9.4%)
November 2006	8,251	4,718 (57.2%)	1,816 (22.0%)	913 (11.1%)	804 (9.7%)
February 2007	8,225	5,191 (63.1%)	1,671 (20.3%)	728 (8.9%)	635 (7.7%)
July 2008	6,940	4,692 (67.6%)	1,356 (19.5%)	446 (6.4%)	446 (6.4%)

Table 1 – Hand Hygiene Opportunities

Hand Hygiene Compliance

Comparisons of hand hygiene compliance before and after patient contact are illustrated in Figure 1. Overall, hand hygiene compliance has decreased by 4.3% since the completion of the 'Clean Hands Save Lives' Campaign in February 2007. Whilst 'before patient contact hand hygiene compliance' indicated a fall of 1.9%, 'after patient contact hand hygiene compliance' fell by 6.8%.

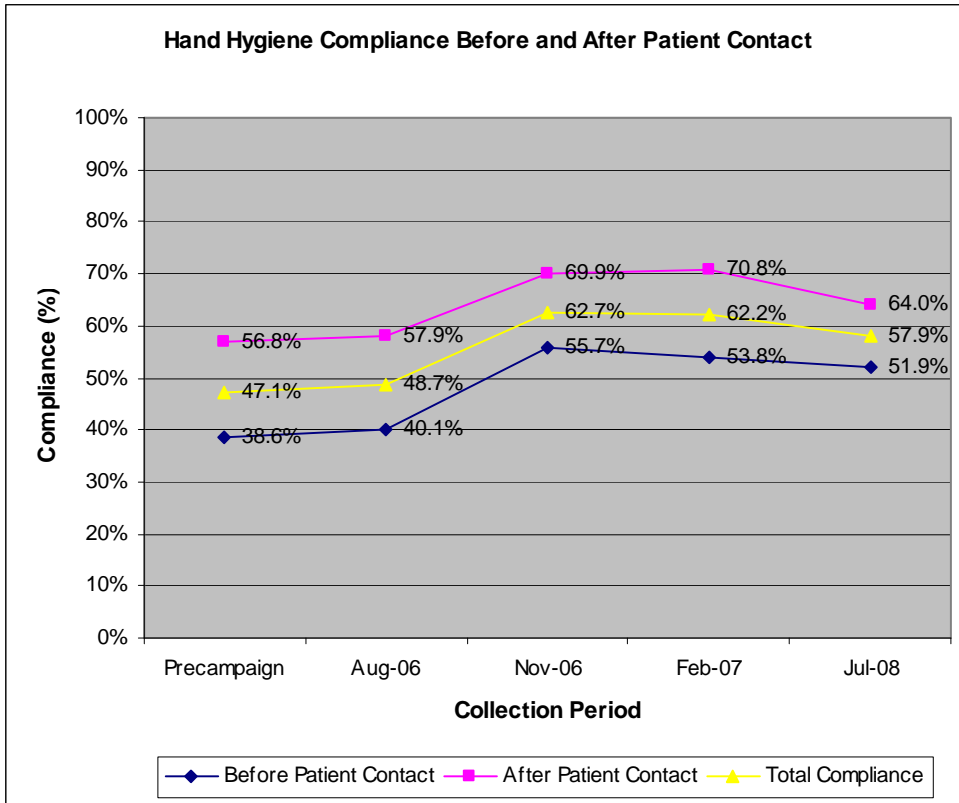


Figure 1 – Hand Hygiene Compliance Before and After Patient Contact

Hand Hygiene Compliance by Professional Group

The overt observation data showed reduced overall hand hygiene compliance in all professional groups since the Clean Hands Save Lives Campaign, with doctors continuing to have the lowest hand hygiene compliance rates (38.9%) in July 2008 (Figure 2).

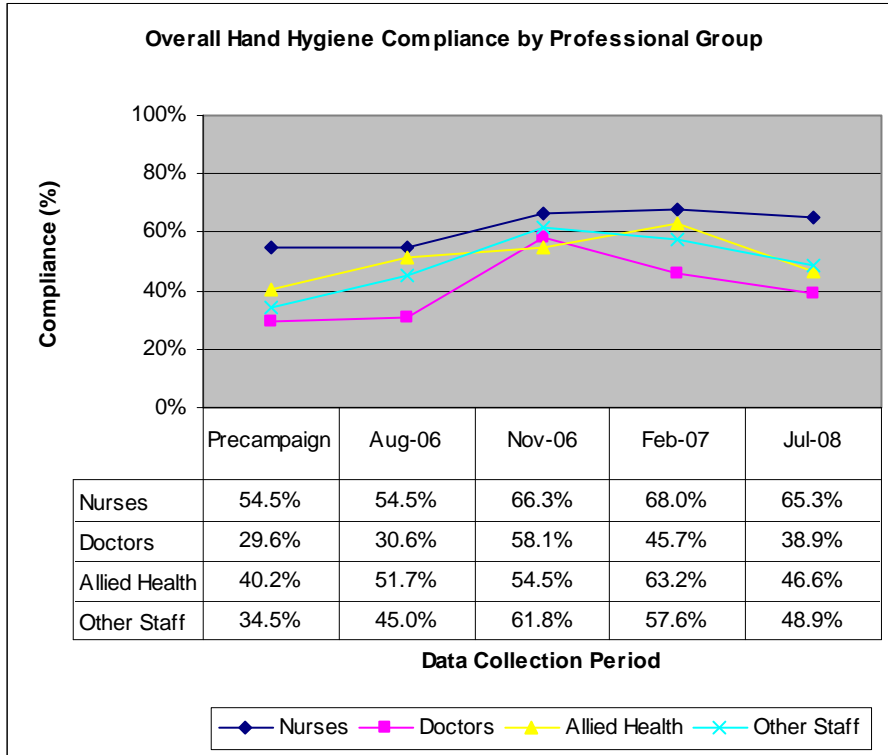


Figure 2 – Overall Hand Hygiene Compliance by Professional Group

Hand Hygiene Compliance Before and After Patient Contact

Further analysis of hand hygiene compliance before and after patient contact shows a slight improvement in nurses' hand hygiene compliance before patient contact (0.3%), whilst doctors, allied health and other staff have shown declines in compliance since February 2007 (Figure 3). All professional groups have shown a decrease in after patient contact hand hygiene compliance (Figure 4).

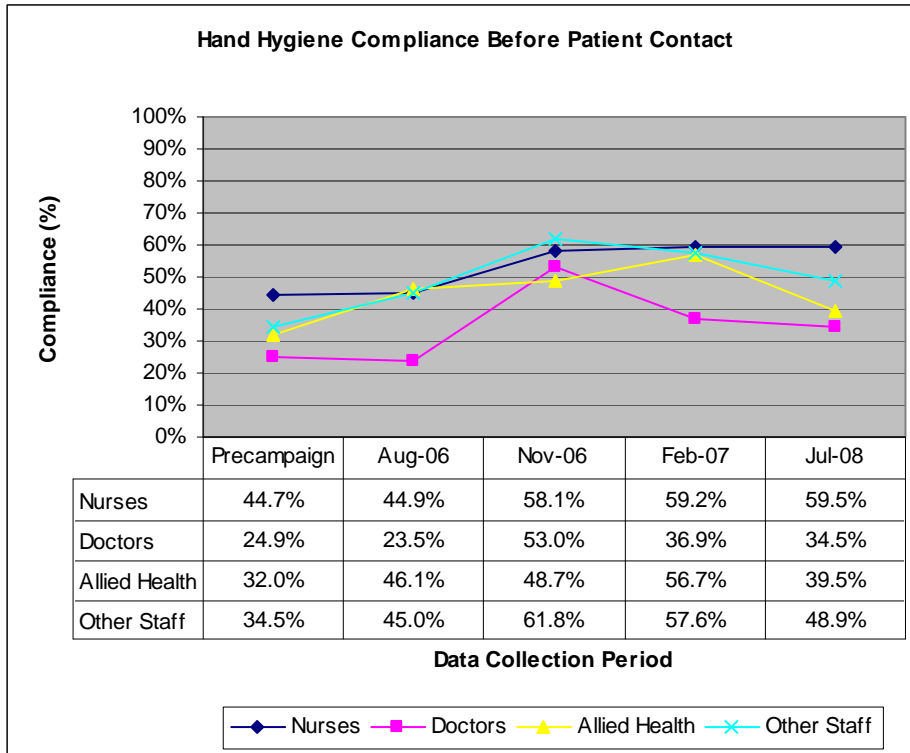


Figure 3 – Hand Hygiene Compliance Before Patient Contact

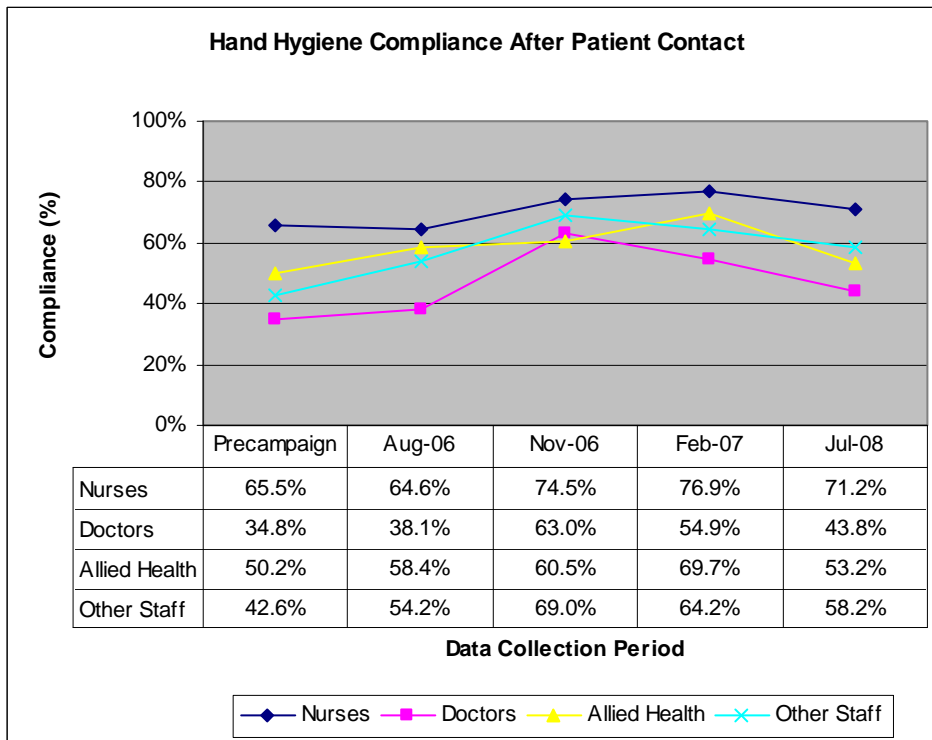


Figure 4 – Hand Hygiene Compliance After Patient Contact

Hand Hygiene Compliance by Risk

Hand hygiene compliance data was also collected for low, medium and high risk activities. Figure 5 demonstrates less than half of the staff observed decontaminate their hands during low risk activities, whilst in high risk activities there was higher compliance than in medium and low risk activities.

Between February 2007 and July 2008, hand hygiene compliance for both high and low risk activities have declined from 73.5% to 67.5% for high, and 59.6% to 47.1% for low. Hand hygiene compliance for medium risk activities increased slightly from 60.9% to 62.2% during the same period.

Notably, approximately one-third of all staff do not decontaminate their hands in high risk activities, including dealing with bodily secretions (urine, faeces, blood) eg catheter bags, suctioning, tracheostomy care, wound dressings, phlebotomy, cannulation, various procedures conducted on same patient and attending a MRO patient.

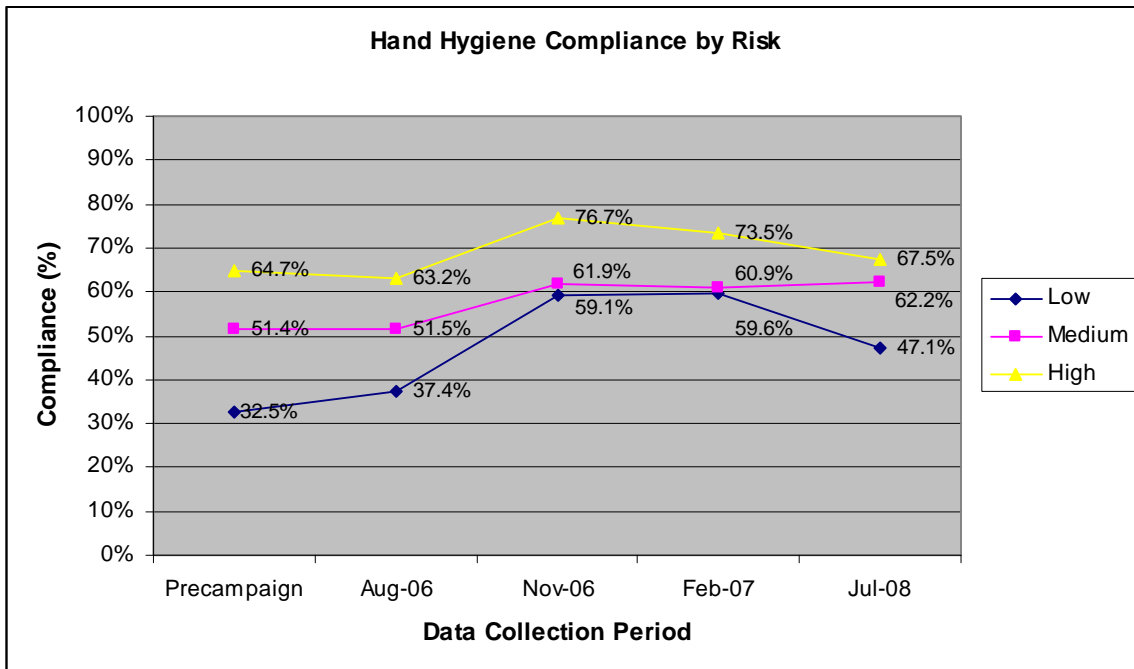


Figure 5 – Hand Hygiene Compliance by Risk

Hand Hygiene Compliance by Area Health Service

Figure 6 illustrates hand hygiene compliance by Area Health Service. Of nine area health services submitting data in July 2008, six area health services reported lower levels of hand hygiene compliance since February 2007. Most notably three area health services reported an approximately 30% decline in hand hygiene compliance.

North Coast Area Health Service reported the lowest overall hand hygiene compliance (39.1%), closely followed by Northern Sydney Central Coast Area Health Service (39.3%).

The Children’s Hospital at Westmead reported the greatest improvement in hand hygiene compliance between February 2007 (51.0%) and July 2008 (85.2%).

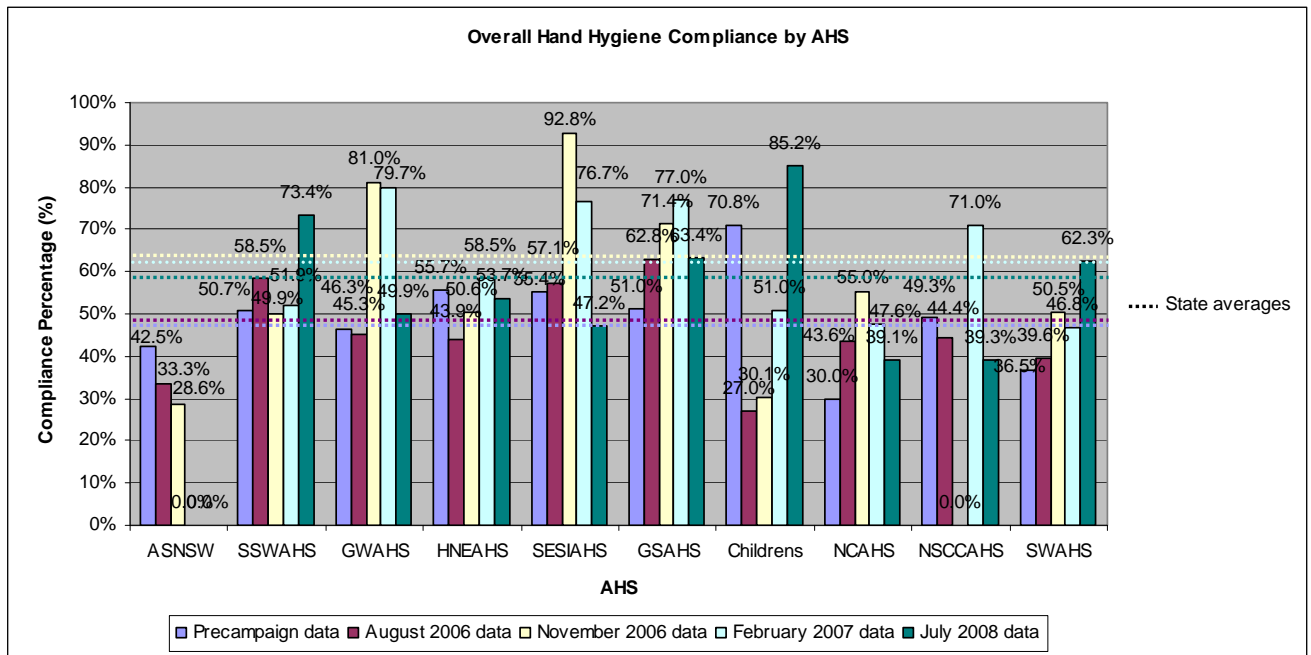


Figure 6 – Overall Hand Hygiene Compliance by Area Health Service

Conclusion

Overt observation results from July 2008 showed a decline in hand hygiene compliance across NSW since the completion of the Clean Hands Save Lives Campaign (February 2007 – 62.2%; July 2008 – 57.9%). Notably, of all professional groups, doctors showed the lowest hand hygiene compliance (38.9%) in this data collection period. Nursing staff reported 65.3% hand hygiene compliance.

Similarly, hand hygiene compliance before patient contact remains lower than hand hygiene compliance after patient contact, possibly continuing to reflect the 'self protective' behaviour postulated during the campaign. Whilst the range between hand hygiene before and after patient contact has narrowed, this is largely due to a reduction in hand hygiene compliance after patient contact rather than improvement in before patient contact.

Doctors, Allied Health and Other Staff groups all showed a decline in hand hygiene compliance before patient contact, and all professional groups demonstrated a decrease in hand hygiene compliance after patient contact.

Area Health Services reported between 39.1% and 85.2% hand hygiene compliance. Six of nine area health services reported lower levels of hand hygiene compliance since February 2007. Three AHS reported that they had continued to conduct regular hand hygiene audits and feedback to staff of the results since the campaign ended in February 2007. These three AHS all improved their rates of hand hygiene compliance demonstrating the importance of continuing to maintain effort in this regard.

One area health service demonstrated a striking improvement in hand hygiene compliance between February 2007 (51.0%) and July 2008 (85.2%). This area health service reported to have continued to implement the hand hygiene audits after the completion of the Clean Hands Save Live Campaign, conducting approximately 1000 observations a month across 16 clinical areas. The area health service continued to provide comprehensive and contemporaneous feedback to all staff through various media, enabling regular monitoring of ward performance and have additionally instilled a recognition and reward process for high performing areas. Furthermore the area health service reported eight consecutive months with hand hygiene compliance over 80%.

The international literature on hand hygiene and change management support the conclusions drawn in this report – that is, change takes time and continued effort to embed. When the funding for project officers was withdrawn at the end of the Clean Hands Save Lives Campaign there was concern that the gains made would be lost. All AHS were encouraged to continue regular audits of compliance and feedback of the results to staff and this was a clear recommendation in the final report of the campaign. The efficacy of this approach is evidenced by the three AHS who continued to do so.