Seirbhís Sláinte Níos Fearr á Forbairt | Building a Better Health Service

hpsc

Annual Epidemiological Report

October 2018

Hand Hygiene in Ireland, 2017

Key Facts

a) Observational Hand Hygiene Audits

- National data on direct observational hand hygiene compliance audits in acute hospitals were collated and reported for two audit periods during 2017
- For both periods (Period 13: June/July and Period 14: October/December), 53 hospitals participated (HSE: 44, private: 9)
    - **Period 13:** in total, 11,120 opportunities for hand hygiene were observed; achieving an average compliance of 90.8% (range = 78.6 - 97.1)
    - **Period 14:** in total, 11,119 opportunities for hand hygiene were observed; achieving an average compliance of 92.6% (range = 84.3 - 99.0)
- The overall compliance for periods 13 and 14 combined for HSE hospitals was 91.3%, just above the HSE target (90%). However, compliance for private hospitals was higher at 93.5%
- Compliance among nurses/midwives (93.9%) and allied health/other professionals (92.4%) was higher than among medical staff (82.6%)

b) Surveillance of Alcohol-Based Hand Rub Consumption

- Forty-one hospitals participated in alcohol-based hand rub consumption surveillance, a rise from 37 in 2016
- Compared to 2016, a 5% increase in the national median rate of alcohol-based hand rub (ABHR) consumption expressed as litres per 1,000 bed days used in acute hospitals in Ireland was observed in 2017 (31.3 versus 29.7)

Suggested citation: HSE Health Protection Surveillance Centre. AER Hand Hygiene in Ireland, 2017. Dublin: HSE HPSC; 2018

Table of Contents

A) Observational Hand Hygiene Audits (OHHA)

Background for OHHA

In Ireland, public reporting of biannual hand hygiene compliance audit data from acute hospitals commenced in 2011. Each hospital must have a minimum of two trained lead hand hygiene auditors. Lead hand hygiene auditors can train local auditors using the National Standard Operating Procedure Manual. Lead hand hygiene auditors are trained by HPSC, and after having passed an inter-rater reliability test must undertake a minimum of two hand hygiene audits per year. Local hand hygiene auditors cannot train others to become hand hygiene auditors. Healthcare workers (HCWs) are observed for their compliance against the '5 moments of hand hygiene' by trained auditors using the WHO methodology for hand hygiene audits. Each hospital is required to measure HCW compliance against 30 hand hygiene opportunities for each of seven randomly-selected wards, resulting in a maximum of 210 opportunities per hospital per period. For practical reasons, in very low activity areas, the number of observed opportunities as low as 25 were accepted.

Results for OHHA

For both periods (Period 13: June/July and Period 14: October/December), 53 hospitals participated (HSE: 44, private: 9):

- **Period 13:** in total, 11,120 opportunities for hand hygiene were observed; achieving an average compliance of 90.8% (range = 78.6 - 97.1)
- **Period 14:** in total, 11,119 opportunities for hand hygiene were observed; achieving an average compliance of 92.6% (range = 84.3 - 99.0)

Results for the two periods combined are displayed in Table 1 and Figure 1. At 91.3%, compliance for HSE hospitals was just above the HSE target of 90%, with a trend of increasing compliance observed over time (Figure 2). Private hospitals reported an overall compliance of 93.5% in 2017.

Table 1 and Figure 1 also display further analysis of hand hygiene compliance for participating HSE hospitals only, by HCW category and breakdown by the WHO five moments for hand hygiene. In 2017, medical staff had the lowest compliance (82.6%), while nurses/midwives had the highest compliance (93.9%). Compliance for moment 5 (after touching patient surroundings) was the lowest at 87.7% and highest for moment 3 (after body fluid exposure) at 94.4%. Alcohol-based hand rub (ABHR) was used for 76.8% of hand hygiene actions, with the remainder using soap and water (23.9%).

Table 1. Hand hygiene compliance audit findings (combined for the two periods in 2017). Analysis by staff category and WHO 5 moments is provided for HSE hospitals only.

	Hand Hygiene Opportunities	Hand Hygiene Actions	Percent Compliance	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Overall	22,239	20,387	91.7%	91.3%	92.1%
HSE Hospitals	18,461	16,856	91.3%	90.9%	91.7%
Private Hospitals	3,778	3,531	93.5%	92.6%	94.3%
Nurse/Midwife	10,917	10,256	93.9%	93.5%	94.4%
Auxiliary	3,023	2,716	89.8%	88.7%	91.0%
Medical	2,976	2,457	82.6%	81.1%	84.1%
Allied health/Other	1,545	1,427	92.4%	91.0%	93.7%
Moment 1	4,922	4,526	92.0%	91.2%	92.7%
Moment 2	948	887	93.6%	92.0%	95.2%
Moment 3	1,351	1,276	94.4%	93.2%	95.7%
Moment 4	6,554	6,104	93.1%	92.5%	93.8%
Moment 5	5,315	4,663	87.7%	86.8%	88.7%

Staff category: Auxiliary = healthcare assistants, porters, catering and household services; Allied health/Other = physiotherapists, radiologists, dieticians, social workers and pharmacists
Five moments for hand hygiene: (1) Before touching a patient; (2) Before clean/aseptic procedure; (3) After body fluid exposure; (4) After touching a patient; (5) After touching patient surroundings

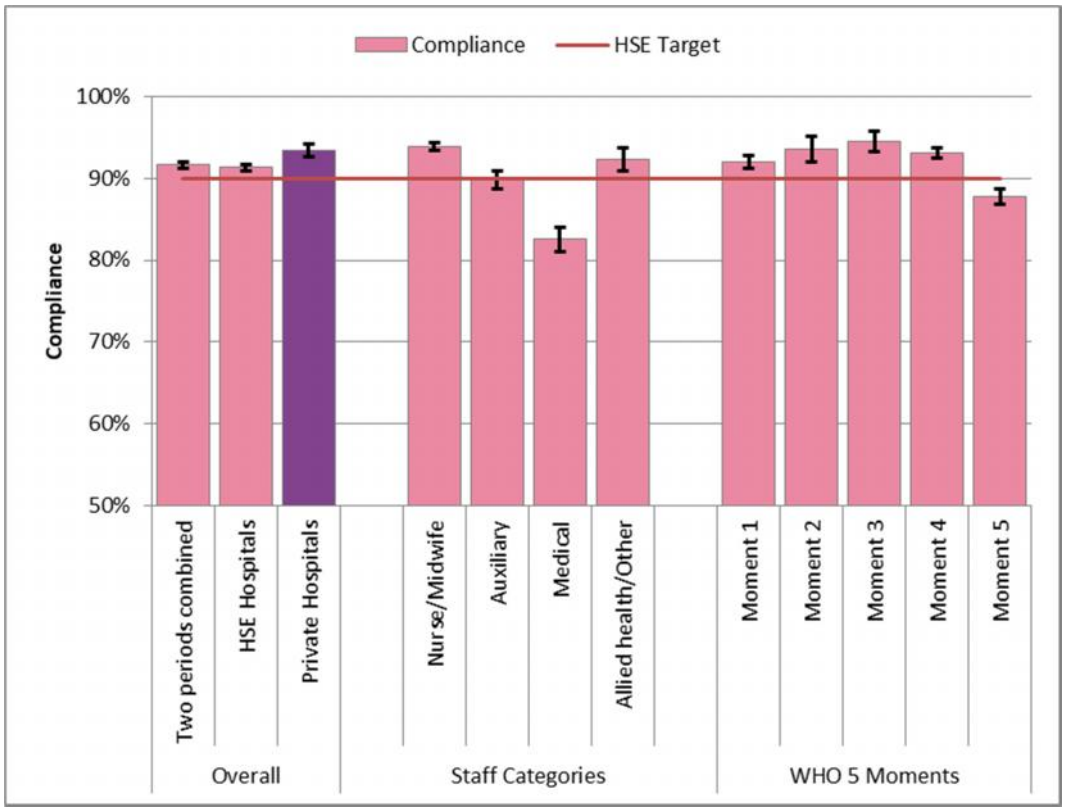

Figure 1. Summary of hand hygiene compliance 2017 (combined for two audit periods). 95% CI shown in black bars and HSE 2017 target of 90% shown as red line. Analysis by staff category and WHO 5 moments is provided for HSE hospitals only.

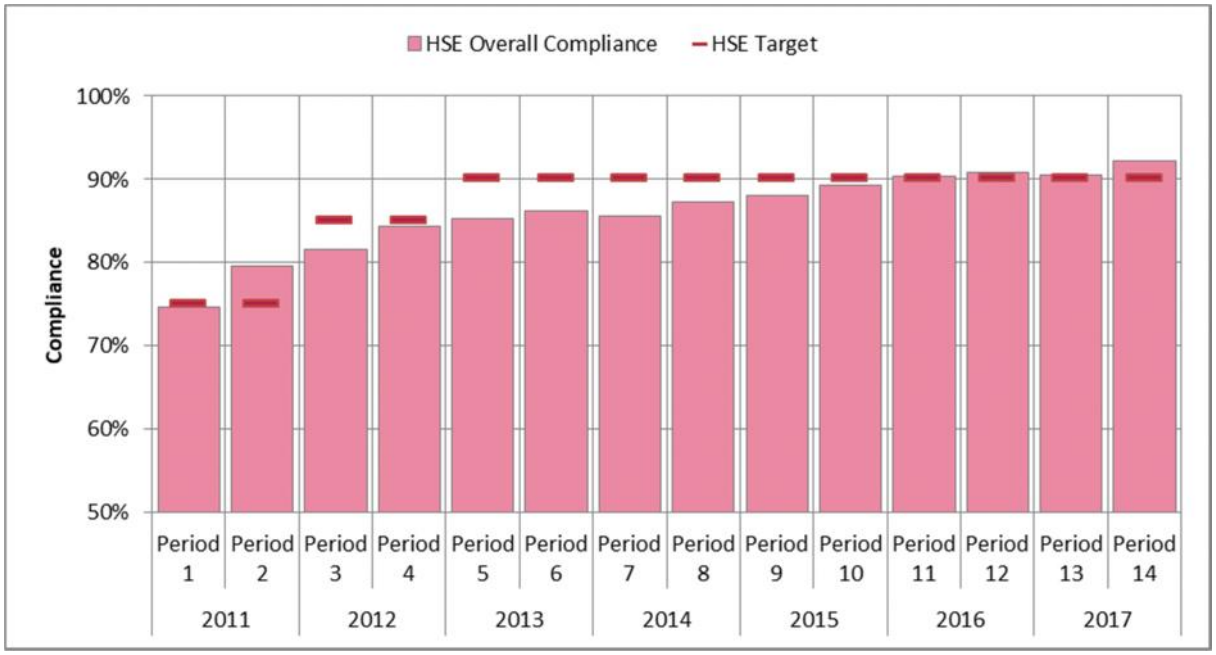

Figure 2. Overall hand hygiene audit compliance in HSE acute hospitals: 2011 – 2017. HSE target for each year is shown as red line.

Survey of opinions for OHHA

There was a survey conducted in early 2018, involving 49 responders from 68% of the acute hospitals based on the results for Period 14 (Oct/Nov 2017) of the national observational hand hygiene audit. The following is a summary of the main findings of the opinion survey:

- Majority of respondents were Infection Prevention Control Nurses who were lead auditors (69.4%)
- Respondents had been in their current role for an average of 9.85 years, and 92% had participated in the development of one or more hand hygiene improvement initiatives
- Of the factors that influenced hand hygiene compliance in a positive way for Period 14, conducting regular hand hygiene audits with evaluation and feedback of results, was noted as the most effective
- The most common factor noted in the respondents assessment of past improvements in their own hospital was good safety culture and senior management leadership/engagement
- Of the factors influencing hand hygiene compliance in a negative way for Period 14, unable to measure HH compliance in single rooms and pre-announced audits (observer effect) making compliance appear to be higher, were noted as the strongest factors
- As a result of the observer effect and other negative factors, the overall opinion among respondents was the level of compliance observed for Period 14 would be of the order of 10% lower
- When asked “What should be the direction of future national audits?”, 36.7% said to continue with the current national standard operating procedures, 8.2% indicated to discontinue the national audit entirely, and 55.1% asked to make changes to the auditing process
- A breakdown of common suggested changes showed that exchanging auditors between facilities (peer assessment) had the highest support

B) Surveillance of Alcohol-Based Hand Rub Consumption (ABHR)

Background for ABHR

National and international guidelines recommend alcohol-based hand rub (ABHR) as the recommended product for hand hygiene where hands are not visibly soiled. Measurement of hospital-level ABHR consumption, inclusive of gel and foam formulations, is expressed as a rate: volume in litres per 1,000 bed days used (L/1,000 BDU). ABHR consumption is a recommended process measure of hand hygiene activity by both the World Health Organization (WHO) and the US Centers for Disease Control & Prevention (CDC).

ABHR consumption data in acute public hospitals in Ireland has been collated by HPSC since 2006. The data are collected quarterly from participating hospitals. Depending on the hospital, ABHR consumption data originates from one of two sources:

1. Pharmacy: The total volume of ABHR dispensed to wards, clinics and other hospital areas
2. Supplies Department: The total volume of ABHR purchased by the hospital

Quantities used for pre-operative surgical hand hygiene were excluded.

Results for ABHR

In 2017, a 5% increase in the national median rate of ABHR consumption expressed as litres per 1,000 bed days used (L/1,000 BDU) in acute hospitals in Ireland was observed (31.3 versus 29.7) (Table 2, Figure 3). The underlying trend over three years has remained relatively stable. Using the median ABHR consumption figure provides a stable indicator of the national rate over time. However, the volume of ABHR consumed remains a crude measure of hand hygiene activity at individual hospital level and must be viewed in conjunction with other indicators, such as direct observation of hand hygiene compliance. As ABHR is the recommended product for the vast majority of hand hygiene opportunities in hospital settings, surveillance of ABHR consumption remains a useful process measure for hand hygiene activity.

Table 2. Annual national ABHR consumption rates in acute public hospitals in Ireland: 2006 – 2017

	Number of participating hospitals	National consumption rate*	Range for participating hospitals
2006	52	10	0.5 - 29.0
2007	50	15	5.2 - 47.1
2008	50	18.1	5.9 - 67.0
2009	49	20.3	4.1 - 47.7
2010	45	18.8	4.2 - 36.4
2011	43	21.3	10.9 - 130.0
2012	44	23.8	9.6 - 160.0
2013	44	26.3	16.4 - 132.5
2014	43	27.7	4.3 - 72.1
2015	39	32.5	10.1 - 96.8
2016	37	29.7	14.7 - 74.0
2017	41	31.3	8.3 – 73.4

* The consumption rate is the total volume of ABHR consumed in the defined time period in litres per 1,000 bed-days used. The national consumption rate represents the median of the national sample for each time period.

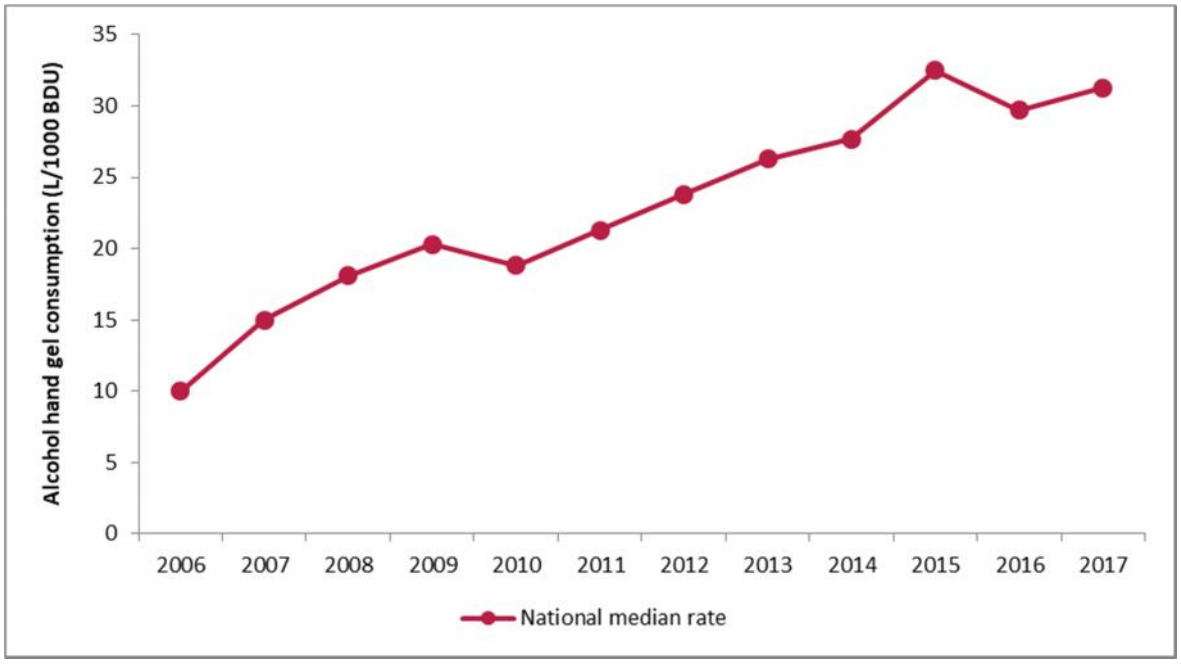

Figure 3. Annual national ABHR consumption rates in acute public hospitals in Ireland: 2006 – 2017

Public Health Implications

Hand hygiene is recognised as the single most important measure that individuals can take to interrupt the spread of communicable diseases. High levels of hand hygiene compliance among healthcare workers have been linked to reductions in the incidence of healthcare-associated infections and spread of multiple drug-resistant organisms.

The two surveillance measures presented in this report (observational audit and alcohol hand rub consumption) are both associated with well recognised caveats and biases. Nevertheless, the fact that both measures steadily increased in parallel over a number of years supports the conclusion that there has been a genuine, and sustained, improvement in hand hygiene compliance among healthcare workers. These data, along with observational data from other sources, suggest that hand hygiene has become the social norm among healthcare workers in Irish hospitals.

Other countries have demonstrated a similar improvement over time. While it is not possible to directly compare results between countries, the reported compliance in Ireland is generally higher than that reported elsewhere. Other countries have reported a similar distribution in terms of compliance among different staff groups (highest among nurses/midwives and among allied health/other professionals, lowest among medical doctors and auxiliary staff) and between different WHO “moments” (with moment 5 consistently associated with the lowest compliance). These variations underline the need for ongoing multi-modal hand hygiene programmes.

Technical notes

Caveats for OHHA

- While standardised hand hygiene auditor training and validation (with inter-rater reliability testing) should ensure that measurement of hand hygiene is comparable, these results have not been validated by external auditors
- All auditors measured hand hygiene compliance in the facility in which they work. Therefore, there may be an element of bias in the results
- It is possible that hand hygiene auditing may not have been performed in a comparable fashion in all hospitals and these results may not reflect HCW compliance at all times
- Compliance with hand hygiene is measured by auditors observing HCWs undertaking patient care and who may change their behaviour if aware that they are being observed (Hawthorne effect). However, it is also known that this diminishes over time and HCWs under observation may not be aware of the presence of the auditor due to the many competing demands on their attention.
- Auditors are requested to give immediate feedback to ward staff following an audit, thereby increasing awareness and knowledge of hand hygiene. This risk of bias should be balanced by the benefits of increasing local staff's knowledge and awareness of hand hygiene.

Caveats for ABHR

- The inter-hospital variation in ABHR consumption rates (8.5 – 73.4), although not as wide as observed in past years may be explained by different local methods for data collection and reporting, along with differences in the type and range of hand hygiene agents used
- This surveillance system includes ABHR only, and does not include other hand hygiene agents (e.g., liquid soap)
- ABHR consumption data does not capture information on a hospital's hand hygiene frequency, opportunities or technique, nor does it distinguish between who has used the ABHR (visitor, patient or healthcare worker)
- The data are prone to reporting artefacts, particularly for hospitals that report supplies (rather than pharmacy dispensing) data. For example, the hospital with the highest reported rate in past years had undergone a change in suppliers and the products had been restocked in all areas of the hospital over a relatively short period of time. It is expected that there will be occasional outliers of this nature.

Further information available on HPSC website

Further information on acute hospital hand hygiene compliance audit in Ireland is available on the HPSC website: http://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/europeansurveillanceofantimicrobialconsumptionesac/publicmicrobreports/ and on acute hospital ABHR consumption in Ireland is available on the HPSC website: http://www.hpsc.ie/A-Z/Gastroenteric/Handwashing/

Acknowledgements

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