

National Hand Hygiene NHS Campaign

Compliance with Hand Hygiene - Audit Report



**It takes just
15 seconds
to clean
your hands.**

Hand hygiene is vitally important in the prevention and control of healthcare associated infections. Please visit www.washyourhandsofthem.com for more information.

Germs. Wash your hands of them.



Health
Protection
Scotland



healthier
scotland
SCOTTISH GOVERNMENT

Germs. Wash your hands of them

Prepared for the Scottish Government Health Directorate HAI Task Force
by Health Protection Scotland

Acknowledgements

This report would not have been completed within schedule without the cooperation and support of:

- Local Health Board Co-ordinators and other staff within NHS boards who participated in national hand hygiene audits.
- The project team and others within Health Protection Scotland (HPS).
- Scottish Government Health Directorate (SGHD) Healthcare Associated Infection (HAI) Policy Unit

© Health Protection Scotland, NHS National Services Scotland,

Gyle Square, 1 South Gyle Crescent, Edinburgh, EH12 9EB

First published January 2012

For all enquiries please contact:

HAI & IC Group
NHS National Services Scotland
Health Protection Scotland
4th Floor
Meridian Court
5 Cadogan Street
Glasgow
G2 6QE

Tel: 0141 300 1100

Fax: 0141 300 1170

Email: NSS.HPSInfectionControl@nhs.net

Reference this report as: Health Protection Scotland (HPS) (January 2012) National Hand Hygiene NHS Campaign Compliance with Hand Hygiene - Audit Report Health Protection Scotland (Report): Glasgow.

For further information go to:

<http://www.washyourhandsofthem.com>

<http://www.hps.scot.nhs.uk/haic/ic/index.aspx>

<http://www.scotland.gov.uk/Topics/Health/NHS-Scotland/19529/2005>

Acronyms

AHP (Allied Health Professional), HAI (Healthcare Associated Infection), HPS (Health Protection Scotland), SGHD (Scottish Government Health Directorate), WHO (World Health Organization).

Contents

1. Executive Summary	1
2. Introduction	2
3. Results	3
3.1 Audit results for Compliance with Hand Hygiene Opportunities - Scotland	3
3.2 Audit results for Compliance with Hand Hygiene Opportunities by NHS Board	4
3.3 Audit results for Compliance with Hand Hygiene Opportunities by Staff Group	5
4. Discussion	6
5. References	7
6. Appendix	8
Appendix 1 - Audit Results for Compliance with Hand Hygiene Opportunities by NHS board including 95% confidence intervals	8

List of Figures

Figure 1: Audit Results for Compliance with Hand Hygiene Opportunities - Scotland	3
Figure 2: Audit Results for Compliance with Hand Hygiene Opportunities by NHS Board	4
Figure 3: Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group	5

List of Tables

Table 1: Summary of Results	1
Table 2: Audit results for Compliance with Hand Hygiene Opportunities by NHS Board including 95% confidence intervals	8

1. Executive Summary

“Hand hygiene is the entrance door to better infection control and safer patient care”¹

This is the 17th bi-monthly report on hand hygiene compliance across NHSScotland prepared for the Scottish Government Health Directorate (SGHD) Healthcare Associated Infection (HAI) Task Force. It forms part of the zero tolerance approach to non compliance with hand hygiene launched by the Cabinet Secretary for Health and Wellbeing on 26 January 2009. The report presents graphical data from Scotland’s fourteen territorial NHS boards along with two special NHS boards (Scottish Ambulance Service and NHS National Waiting Times Centre Board, Golden Jubilee National Hospital).

Please refer to the main report published in May 2009² for a full description of the methodology and limitations associated with this report. The report is available at:

<http://www.hps.scot.nhs.uk/haic/ic/nationalhandhygienecampaign.aspx>

This 17th bi-monthly report, as with previous National Hand Hygiene Audit Reports, describes occasions when NHS staff have taken the opportunity to carry out hand hygiene at the points in delivering clinical care as described in the World Health Organization (WHO) published guidance on ‘Your 5 moments for hand hygiene’.³ It is not the aim of this national report to describe any other aspects of hand hygiene performance outwith compliance with opportunities, for example the use of correct hand hygiene technique. Compliance with taking the opportunity for hand hygiene across NHSScotland is 95% in this 17th bi-monthly report.

NHS Boards submit the results of their hand hygiene compliance audits to Health Protection Scotland (HPS) following mandatory bi-monthly audit periods. Results for the 14th, 15th, 16th and 17th bi-monthly audit periods are summarised below.

Table 1: Summary of Results

	14th Bi-monthly Audit Period (%) 23 May – 3 Jun 2011 (Mean % plus confidence intervals)	15th Bi-monthly Audit Period (%) 25 Jul – 5 Aug 2011 (Mean % plus confidence intervals)	16th Bi-monthly Audit Period (%) 26 Sept – 7 Oct 2011 (Mean % plus confidence intervals)	17th Bi-monthly Audit Period (%) 21 Nov – 2 Dec 2011 (Mean % plus confidence intervals)
National Compliance	95% (94% to 96%)	95% (94% to 96%)	95% (94% to 96%)	95% (94% to 96%)
Nurse	97% (96% to 98%)	95% (94% to 96%)	96% (95% to 97%)	97% (96% to 98%)
Medical	87% (83% to 91%)	88% (83% to 93%)	89% (86% to 92%)	88% (84% to 92%)
Ancillary/Others	96% (94% to 98%)	97% (95% to 99%)	94% (91% to 97%)	95% (92% to 98%)
AHP	97% (95% to 99%)	98% (97% to 99%)	95% (93% to 97%)	96% (94% to 98%)

2. Introduction

Hand hygiene is considered one of the most effective measures in reducing and preventing the incidence of avoidable illness, in particular HAI.^{4,5} All staff within healthcare settings should be aware of this and perform hand hygiene effectively and in a timely fashion.^{3,6} Audit is one of a number of effective approaches, identified by the WHO, in promoting compliance with hand hygiene in healthcare settings.³

Results showing compliance with hand hygiene opportunities are often reported in the published literature. For example, hand hygiene compliance data from various countries, published by the WHO, describe results ranging from 5% to 76% before interventions and 30% to 92% after interventions.³ Seminal work conducted in Geneva found a baseline compliance rate of 48% rising to 66% after interventions.⁷ Similarly, the introduction of a hand hygiene culture-change program in Australia reported a base-line compliance level of 20% increasing to 53%, 12 months after the introduction of interventions.⁸ An institution-wide hand hygiene programme was introduced over a three year period in America and involved wide availability of hand hygiene products in addition to monitoring of hand hygiene compliance. Throughout the hand hygiene programme, compliance increased steadily reaching 90% after the first year of the programme.⁹

Pilot work conducted in two wards within six trusts across England between June 2003 and January 2004, as part of the 'cleanyourhands' campaign, found results ranging from 39% to 70% across the six trusts that took part.¹⁰ The success of the pilot campaign led to its introduction across an entire trust with individual ward compliance levels ranging from 29% to 66%.¹¹

Such results tend to be based on single clinical areas, hospitals or at times groups of hospitals, and compliance rates are dependant on definitions and methods employed for audit, which do differ. The national approach to compliance monitoring being undertaken across Scotland is different from other methods reported in the literature which monitor compliance with hand hygiene at hospital or hospital grouping level.

3. Results

3.1 Audit results for Compliance with Hand Hygiene Opportunities - Scotland

Based on the data submitted by NHS boards, audit results for compliance with hand hygiene opportunities have been established for Scotland as a whole for the 14th, 15th, 16th and 17th bi-monthly audit periods.

Figure 1: Audit Results for Compliance with Hand Hygiene Opportunities - Scotland

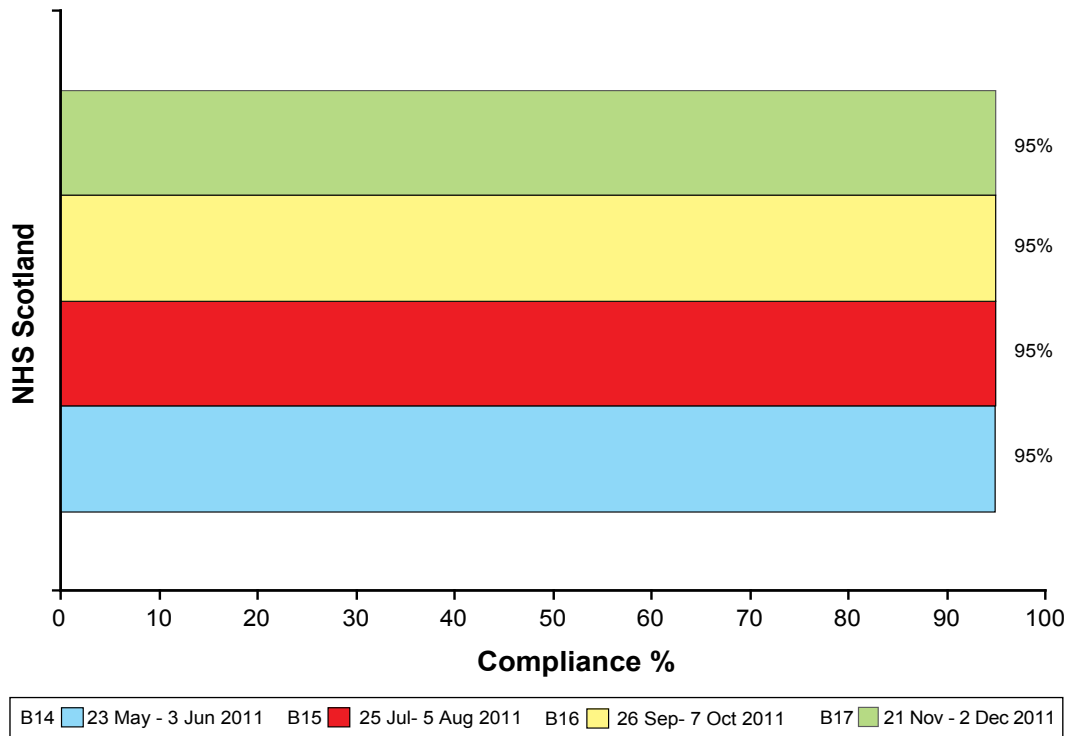


Figure 1 indicates that national compliance with hand hygiene was sustained at 95% (94% to 96%) in this 17th bi-monthly audit period.

3.2 Audit results for Compliance with Hand Hygiene Opportunities by NHS Board

Audit results for compliance with hand hygiene opportunities have been established for each NHS board for the 14th, 15th, 16th and 17th bi-monthly audit periods.

Figure 2: Audit Results for Compliance with Hand Hygiene Opportunities by NHS Board

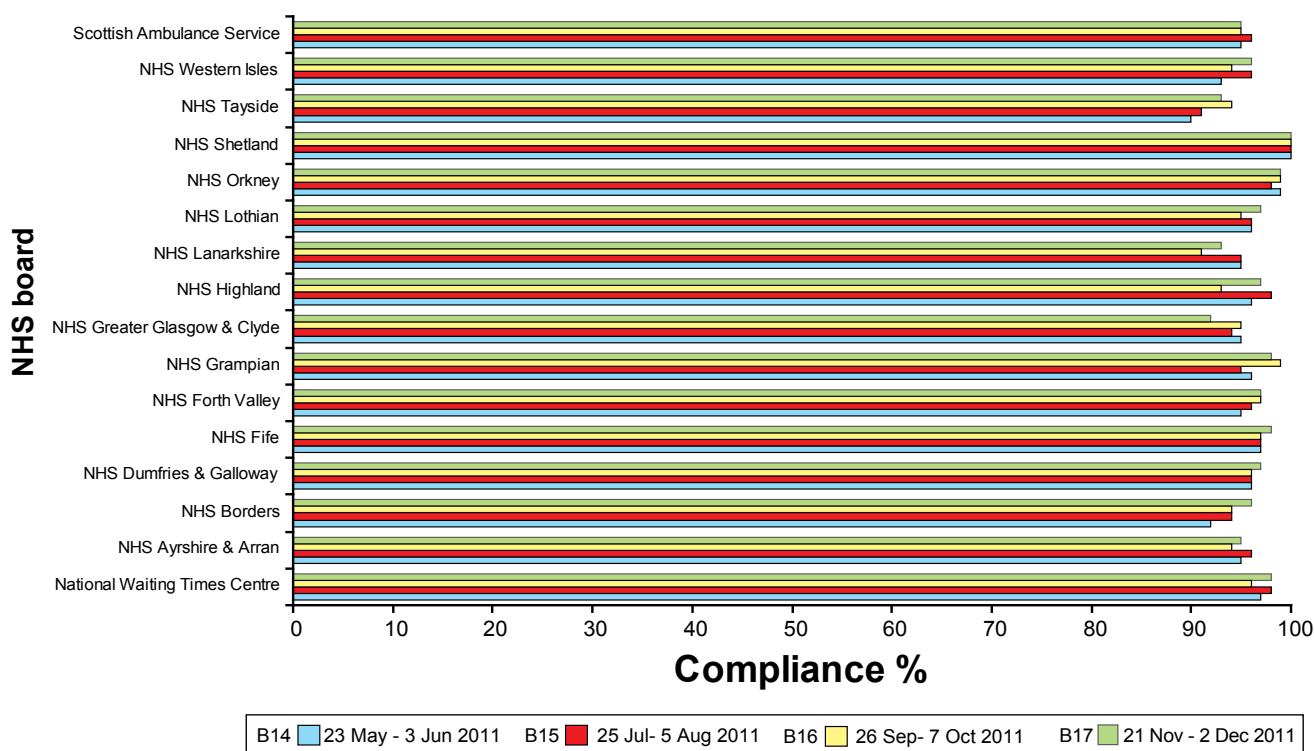


Figure 2 indicates that compliance percentages for the 14th audit period ranged from 90% to 100% (mean 95%). In the 15th audit period they ranged from 91% to 100% (mean 95%). In the 16th audit period they ranged from 91% to 100% (mean 95%). In the 17th audit period they ranged from 92% to 100% (mean 95%).

- 9 NHS Boards measured an increase in hand hygiene compliance compared to the 16th bi-monthly audit period.
- 4 NHS Boards sustained the same level of compliance with hand hygiene as measured during the 16th bi-monthly audit period.
- 3 NHS Boards measured a decrease in hand hygiene compliance compared to the 16th bi-monthly audit period.

Also see Appendix I for Table 2: Audit results for Compliance with Hand Hygiene Opportunities by NHS Board. This gives details of the numbers of opportunities observed and taken within each NHS Board.

* The NHS National Waiting Times Centre and Scottish Ambulance Service are categorised as a special boards as their composition is exceptionally different to other NHS boards.

3.3 Audit results for Compliance with Hand Hygiene Opportunities by Staff Group

Audit results for compliance with hand hygiene opportunities have been established for each of the defined staff groups for the 14th, 15th, 16th and 17th bi-monthly audit periods.

Figure 3: Audit Results for Compliance with Hand Hygiene Opportunities by Staff Group

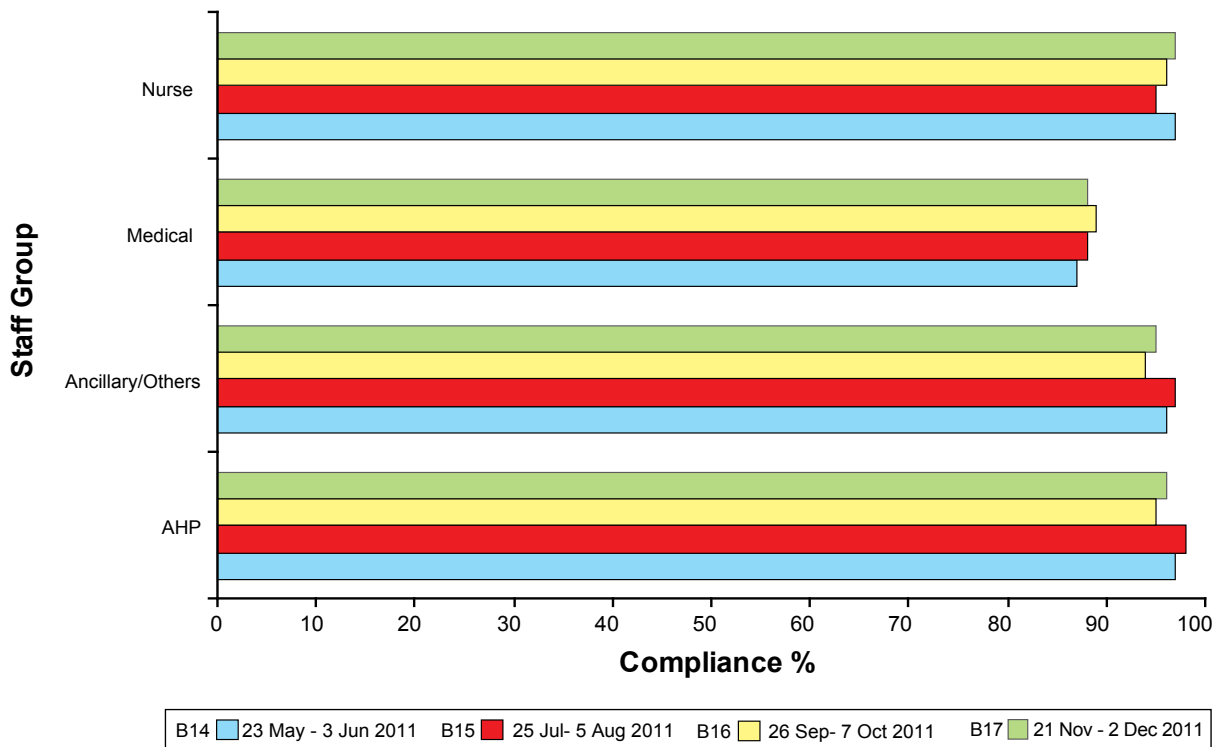


Figure 3 indicates that Hand hygiene compliance percentages for defined staff groups in the 14th bi-monthly audit period was 87% to 97%, 15th bi-monthly audit period compliance was between 88% to 98% and in the 16th bi-monthly audit period ranged from 89% to 96%. In the 17th bi monthly audit period audit compliance was between 88% and 97%.

Hand hygiene compliance increased among the nursing staff group to 97% (96% to 98%), ancillary/others to 95% (92% to 98%) and AHP 96% (94% to 98%). Medical staff compliance with hand hygiene reduced to 88% (84% to 92%) in the 17th bi-monthly audit period.

In summary:

- Nurse - Hand hygiene compliance increased to 97% in the 17th bi-monthly audit period.
- Medical - Hand hygiene compliance decreased to 88% in the 17th bi-monthly audit period.
- Ancillary/others - Hand hygiene compliance increased to 95% in the 17th bi-monthly audit period.
- AHP - Hand hygiene compliance increased to 96% in the 17th bi-monthly audit period.

4. Discussion

This is the 17th bi-monthly report to present hand hygiene compliance data at a national level throughout NHSScotland.

Compliance with opportunities for hand hygiene was sustained at 95% in the 17th bi-monthly audit period. The results obtained for all bi-monthly audit periods suggest that compliance with opportunities for hand hygiene in Scotland compares favourably to rates from hospitals/single clinical areas of 5% to 92% within the published literature.^{3,7,8,10}

Hand hygiene compliance at NHS board level for the 17th bi-monthly audit period ranged from 92% to 100% (mean 95%). By presenting 95% confidence intervals around the NHS Board results, it is possible to assess the accuracy of these observed results (which are an estimate of the true overall compliance obtained through observation of a sample). Therefore, we can be 95% confident that the true compliance figure can be found within these intervals. In the 17th bi-monthly audit period, 9 NHS Boards measured an increase in the level of hand hygiene compliance compared to the 16th bi-monthly audit period although no increase in compliance was statistically significant. Furthermore, 4 NHS Boards sustained the same level of compliance with hand hygiene in the 17th bi-monthly audit period as was measured in the 16th bi-monthly audit period. Hand hygiene compliance in 3 NHS boards decreased in the 17th bi-monthly audit period compared to the 16th bi-monthly audit period although no decrease in compliance was statistically significant. Although ranges of compliance results and confidence intervals are presented within the report, caution should be taken when attempting to make any comparison between NHS Boards as they can differ in their composition. The overall aim of presenting these results is to allow monitoring within NHS Boards and to provide an indication of hand hygiene compliance amongst staff. Any small differences presented that show either minimal increase or decrease in compliance percentages between NHS Boards should be interpreted with caution as these are unlikely to be statistically significant.

Hand hygiene compliance increased among the nursing staff group to 97% (96% to 98%), ancillary/others to 95% (92% to 98%) and AHP 96% (94% to 98%). Medical staff compliance with hand hygiene reduced to 88% (84% to 92%) in the 17th bi-monthly audit period.

A range of studies show that compliance varies between staff groups,^{3,11,12} therefore, it is necessary to understand the reasons for variation in order to target interventions at relevant groups to improve compliance with hand hygiene.

WHO clearly summarises that there are many factors that influence adherence to hand hygiene compliance, including skin irritation, lack of supplies and time pressures. WHO states that sustainability of hand hygiene compliance over time is an ongoing challenge.³ Efforts continue throughout NHSScotland to ensure that both recommended initiatives such as the supply of hand hygiene solutions¹³ and locally identified actions to improve compliance are implemented. Other elements of the Campaign are aimed at promoting sustainable improvements in hand hygiene throughout Scotland to aid NHSScotland's approach to zero tolerance.

5. References

1. Pittet, D., University of Geneva Hospitals, Geneva, Switzerland and Leader, World Health Organization First Global Patient Safety Challenge, Personal Communication, Jun. 11, 2007.
2. Health Protection Scotland (HPS) (May 2009) National Hand Hygiene NHS Campaign Compliance with Hand Hygiene – Audit Report Health Protection Scotland (Report): Glasgow available from: <http://www.hps.scot.nhs.uk/haic/ic/nationalhandhygienecampaign.aspx>
3. WHO. WHO Guidelines on Hand Hygiene in Health Care, First Global Patient Safety Challenge: Clean Care is Safer Care 2009: WHO, Geneva.
4. Johnson PDR, Martin R, Burrell LJ, Grabsch EA, Kirsa SW, O’Keeffe J, Mayall BC, Edmonds D, Barr W, Bolger C, Naidoo H, Grayson ML. Efficacy of an alcohol methicillin-resistant *Staphylococcus aureus* (MRSA) infection. *Medical Journal of Australia* 2005; **183**, 509-514.
5. Lepelletier D, Corvec S, Caillon J, Reynaud A, Rozé JC, Gras-Leguen C. Eradication of methicillin-resistant *Staphylococcus aureus* in a neonatal intensive care unit: Which measures for which success? *American Journal of Infection Control* 2009; **37**(3), 195-200.
6. Larson EL. APIC guideline for handwashing and hand antisepsis in health care settings. *American Journal of Infection Control* 1995; **23**(4), 251-269.
7. Pittet D, Hugonnet S, Harbarth S, Mourouga P, Sauvan V, Touveneau S, Perneger TV. Effectiveness of a hospital-wide programme to improve compliance with hand hygiene, *The Lancet* 2000; **356**, 1307-1312.
8. Grayson ML, Jarvie LJ, Johnson PDR, Jodoin ME, McMullan C, Gregory RHC, Bellis K, Cunnington K, Wilson FL, Quin D, Kelly AM. Significant reductions in methicillin-resistant *Staphylococcus aureus* bacteraemia and clinical isolates associated with a multisite, hand hygiene culture-change program and subsequent successful statewide roll-out. *Medical Journal of Australia* 2008; **188**, 633-640.
9. Ancona R, Boehler R, Chapman L. Sustained hand hygiene initiative reduces MRSA transmission. *Journal of Clinical Outcomes Management* 2009; **16** (4).
10. NPSA. Observation of hand hygiene tool. 2004:NPSA, London.
11. Randle J, Clarke M, Storr J. Hand hygiene compliance in healthcare workers. *Journal of Hospital Infection* 2006; **64**, 205-209.
12. Wendt C, Knautz D, von Baum H. Differences in hand hygiene behaviour related to the contamination risk of healthcare activities in different groups of healthcare workers. *Infection Control and Hospital Epidemiology* 2004; **25**, 203-206.
13. SEHD. CNO (2005) 1 Alcohol Based Handrubs and Infection Control. 2005:SEHD, Edinburgh.

6. Appendix

Appendix 1 - Audit Results for Compliance with Hand Hygiene Opportunities by NHS board including 95% confidence intervals

Table 2: Audit results for Compliance with Hand Hygiene Opportunities by NHS Board including 95% confidence intervals

NHS board	14th Bi-monthly Audit Period (%)			15th Bi-monthly Audit Period (%)			16th Bi-monthly Audit Period (%)			17th Bi-monthly Audit Period (%)		
	23 May – 3 Jun 2011			25 Jul – 5 Aug 2011			26 Sep – 7 Oct 2011			21 Nov – 2 Dec 2011		
	Opps* Obs	Opps** Taken	% (CI)	Opps Obs	Opps Taken	% (CI)	Opps Obs	Opps Taken	% (CI)	Opps Obs	Opps Taken	% (CI)
Scottish Ambulance Service	300	284	95% (92%, 98%)	300	288	96% (94%, 98%)	300	285	95% (93%, 97%)	300	286	95% (93%, 97%)
NHS Western Isles	300	278	93% (90%, 96%)	300	287	96% (94%, 98%)	300	281	94% (91%, 97%)	300	287	96% (94%, 98%)
NHS Tayside	300	270	90% (87%, 93%)	300	274	91% (88%, 94%)	300	283	94% (91%, 97%)	300	278	93% (90%, 96%)
NHS Shetland	300	300	100% (100%, 100%)	300	299	100% (99%, 100%)	300	300	100% (100%, 100%)	300	299	100% (99%, 100%)
NHS Orkney	300	298	99% (98%, 100%)	300	295	98% (97%, 99%)	300	297	99% (98%, 100%)	300	298	99% (98%, 100%)
NHS Lothian	300	289	96% (94%, 98%)	300	287	96% (94%, 98%)	300	284	95% (92%, 98%)	300	292	97% (95%, 99%)
NHS Lanarkshire	300	286	95% (93%, 97%)	300	285	95% (93%, 97%)	300	274	91% (88%, 94%)	300	279	93% (90%, 96%)
NHS Highland	300	288	96% (94%, 98%)	300	293	98% (96%, 100%)	300	279	93% (90%, 96%)	300	291	97% (95%, 99%)
NHS Greater Glasgow & Clyde	300	285	95% (93%, 97%)	300	283	94% (91%, 97%)	300	285	95% (93%, 97%)	300	277	92% (89%, 95%)
NHS Grampian	300	287	96% (94%, 98%)	300	285	95% (93%, 97%)	300	298	99% (98%, 100%)	300	294	98% (96%, 100%)
NHS Forth Valley	300	284	95% (92%, 98%)	300	289	96% (94%, 98%)	300	291	97% (95%, 99%)	300	292	97% (95%, 99%)
NHS Fife	300	292	97% (95%, 99%)	300	291	97% (95%, 99%)	300	291	97% (95%, 99%)	300	293	98% (96%, 100%)
NHS Dumfries & Galloway	300	288	96% (94%, 98%)	300	289	96% (94%, 98%)	300	287	96% (94%, 98%)	300	291	97% (95%, 99%)
NHS Borders	300	276	92% (89%, 95%)	300	283	94% (91%, 97%)	300	283	94% (91%, 97%)	300	289	96% (94%, 98%)
NHS Ayrshire & Arran	300	286	95% (93%, 97%)	300	289	96% (94%, 98%)	300	282	94% (91%, 97%)	300	284	95% (92%, 98%)
National Waiting Times Centre	300	291	97% (95%, 99%)	300	294	98% (96%, 100%)	300	289	96% (94%, 98%)	300	293	98% (96%, 100%)

*Opps Obs = opportunities observed

**Opps Taken = opportunities taken



<http://www.hps.scot.nhs.uk>