

National Hand Hygiene NHS Campaign

Compliance with Hand Hygiene - Audit Report



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

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<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).

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1. Executive Summary

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

This is the 4th bi-monthly report on hand hygiene compliance across NHS Scotland 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 4th bi-monthly report, as with previous National 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 is 92% in this 4th 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 1st, 2nd, 3rd and 4th bi-monthly audit periods are summarised below.

Table 1: Summary of Results

	1st Bi-monthly Audit Period 9-20 March 2009 (Mean % plus Confidence intervals)	2nd Bi-monthly Audit Period 11-22 May 2009 (Mean % plus Confidence intervals)	3rd Bi-monthly Audit Period 20-31 July 2009 (Mean % plus Confidence intervals)	4th Bi-monthly Audit Period 21 Sept-2 Oct 2009 (Mean % plus Confidence intervals)
National Compliance	92% (91% to 93%)	93% (92% to 94%)	93% (92% to 94%)	92% (91% to 93%)
National Compliance: Nurse	92% (90% to 94%)	94% (93% to 95%)	94% (93% to 95%)	94% (93% to 95%)
National Compliance: Medical	86% (82% to 90%)	86% (82% to 90%)	87% (83% to 91%)	88% (84% to 92%)
National Compliance: Ancillary/Others	93% (90% to 96%)	93% (90% to 96%)	94% (91% to 97%)	91% (88% to 94%)
National Compliance: AHP	96% (94% to 98%)	95% (92% to 98%)	95% (93% to 97%)	90% (87% to 93%)

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 1st, 2nd, 3rd and 4th bi-monthly audit periods.

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

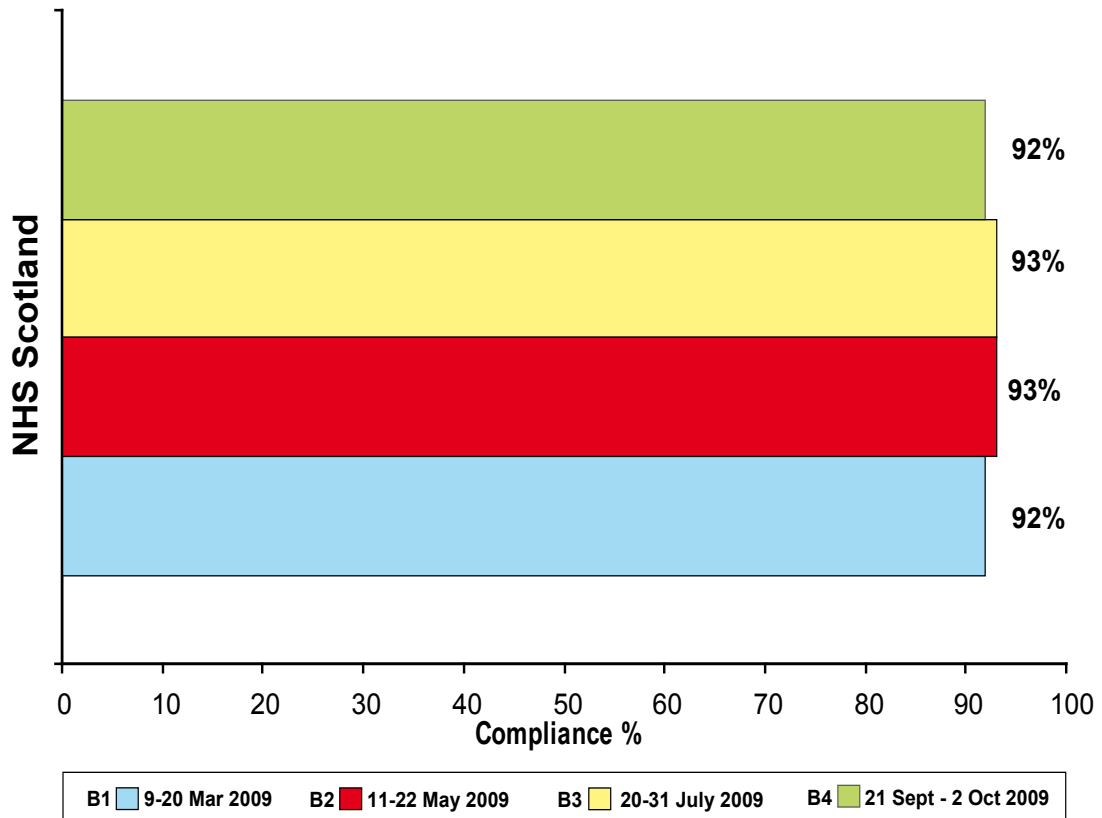


Figure 1 indicates that national compliance with hand hygiene increased from 92% (91% to 93%) in the 1st bi-monthly audit period to 93% (92% to 94%) in the 2nd bi-monthly audit period and was sustained at 93% (92% to 94%) in the 3rd bi-monthly audit period. Hand hygiene compliance in the 4th bi-monthly audit period was 92% (91% to 93%).

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 1st, 2nd, 3rd and 4th bi-monthly audit periods.

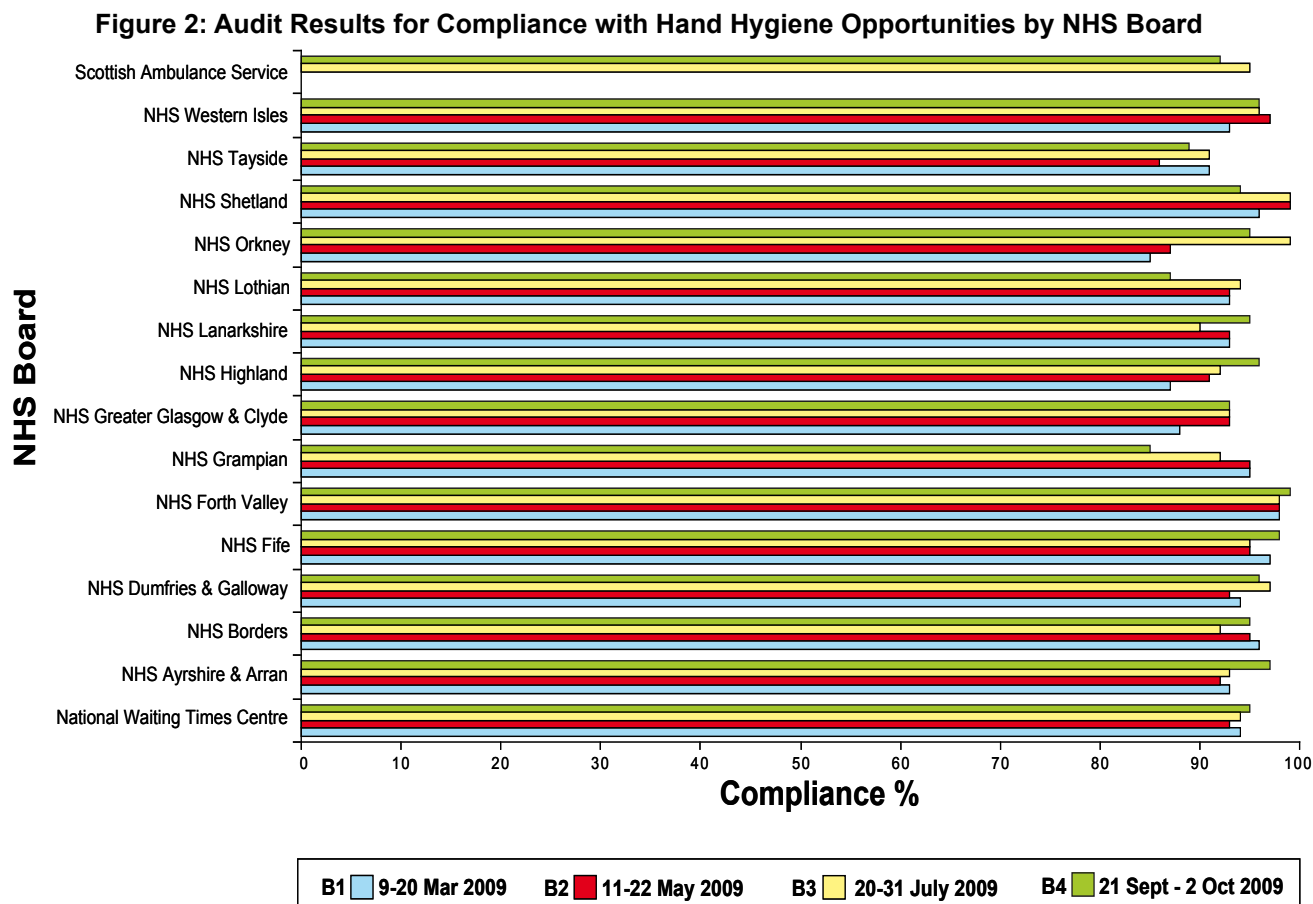


Figure 2 indicates that compliance percentages for the 1st bi-monthly audit period ranged from 85% to 98% (mean 92%) for each NHS boardⁱ whilst for the 2nd and 3rd bi-monthly audit periods overall compliance with hand hygiene across each NHS board ranged from 86% to 99% (mean 93%) and 90% to 99% (mean 93%) respectively. In the 4th bi-monthly audit period compliance percentages for each board ranged from 85% to 99% (mean 92%).

In summary:

- Seven NHS boards measured an increase in hand hygiene compliance compared to the 3rd bi-monthly audit period although no increase was statistically significant.
- Two NHS boards sustained the same level of compliance with hand hygiene as measured during the 3rd bi-monthly audit period.
- Seven NHS boards measured a decrease in hand hygiene compliance compared to the 3rd bi-monthly audit period. The decrease in two NHS boards was statistically significant.

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, along with 95% confidence intervals.

ⁱ 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 1st, 2nd, 3rd and 4th bi-monthly audit periods.

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

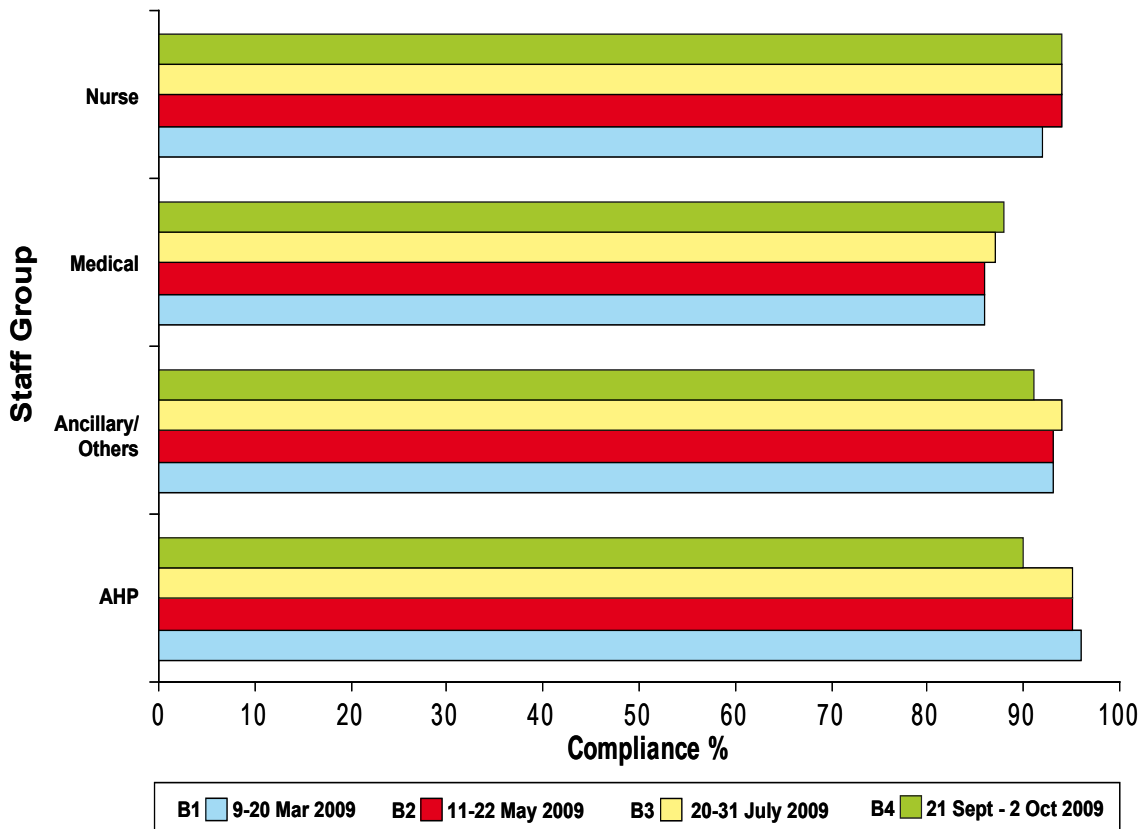


Figure 3 indicates that the compliance percentage for defined staff groups in the 1st bi-monthly audit period ranged from 86% to 96% whilst the range for defined staff groups in the 2nd bi-monthly audit period was 86% to 95%. Hand hygiene compliance ranged from 87% to 95% and 88% to 94% among defined staff groups for the 3rd and 4th bi-monthly audit periods respectively.

Compliance with hand hygiene was highest among the nurse staff group at 94% (93% to 95%). The AHP staff group compliance with hand hygiene was 90% (87% to 93%) whilst compliance with hand hygiene among the ancillary/others staff group was 91% (88% to 94%). Hand hygiene compliance among the medical staff group was 88% (84% to 92%).

In summary:

- Nurse – Hand hygiene compliance was sustained at 94% in the 4th bi-monthly audit period.
- Medical – Hand hygiene compliance increased to 88% in the 4th bi-monthly audit period, although this increase was not statistically significant.
- Ancillary/others - Hand hygiene compliance decreased to 91% in the 4th bi-monthly audit period, although the decrease in compliance was not statistically significant.
- AHP - Hand hygiene compliance decreased to 90% in the 4th bi-monthly audit period, although the decrease in compliance was not statistically significant.

4. Discussion

This is the 4th bi-monthly report to present hand hygiene compliance data at a national level throughout NHSScotland.

Compliance with opportunities for hand hygiene increased from 92% in the 1st bi-monthly audit period to 93% in the 2nd bi-monthly audit period and was sustained at 93% in the 3rd bi-monthly audit period. Hand hygiene compliance was 92% in the 4th bi-monthly audit period. The results obtained for all four 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 4th bi-monthly audit period ranged from 85% to 99%. 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 4th bi-monthly audit period, seven NHS boards measured an increase in the level of hand hygiene compliance compared to the 3rd bi-monthly audit period, although no increase in compliance was statistically significant. Furthermore, two NHS boards sustained the same level of compliance with hand hygiene in the 4th bi-monthly audit period as was measured in the 3rd bi-monthly audit period. Hand hygiene compliance in seven NHS boards decreased in the 4th bi-monthly audit period compared to the 3rd bi-monthly audit period, with a statistically significant decrease measured for NHS Shetland and NHS Orkney. 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.

The results presented in this report show that staff group compliance ranged from 88% to 94%. Compliance with hand hygiene in the medical staff group increased from 87% to 88% in the 4th bi-monthly audit period, although this increase was not statistically significant. The nurse staff group compliance level was sustained at 94% in the 4th bi-monthly audit period. A decrease in hand hygiene compliance from 94% to 91% in the 4th bi-monthly audit period was measured for the ancillary/others staff group although this decrease in compliance was not statistically significant. Similarly, although a decrease in hand hygiene compliance from 95% to 90% in the 4th bi-monthly audit period was measured for the AHP staff group again this was not a statistically significant decrease.

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. Although several studies have demonstrated success in improving hand hygiene compliance in the short term, WHO states that sustainability of hand hygiene compliance over longer periods of time is an ongoing challenge.³ As NHSScotland has managed to increase compliance from 68% to greater than 90% over a two year period, sustainability is an ongoing challenge.

Efforts continue throughout NHSScotland to ensure implementation of national hand hygiene campaign initiatives aimed at promoting sustainable improvements (such as the supply of hand hygiene solutions¹³) in addition to implementation of locally identified actions to improve hand hygiene compliance (e.g. feedback of "real-time" data and action).

The national hand hygiene campaign will continue to support NHS boards. The work programme for 2009/2010 includes extending the campaign to healthcare staff working in non-acute settings. The provision of additional resources will complement and build upon the work already being undertaken by community based staff to improve hand hygiene practice thus assisting NHS boards in working towards the Scottish Government's requirement for a zero tolerance approach to non compliance with hand hygiene.

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6. Appendix

Appendix I - 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	1st Bi-monthly Audit Period (%) 9-20 March 2009			2nd Bi-monthly Audit Period (%) 11-22 May 2009			3rd Bi-monthly Audit Period (%) 20-31 July 2009			4th Bi-monthly Audit Period (%) 21 Sept-2 Oct 2009		
	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	277	92% (89%, 95%)
NHS Western Isles	300	278	93% (90%, 96%)	300	291	97% (95%, 99%)	300	287	96% (94%, 98%)	300	289	96% (94%, 98%)
NHS Tayside	300	273	91% (88%, 94%)	300	259	86% (82%, 90%)	300	272	91% (88%, 94%)	300	268	89% (86%, 92%)
NHS Shetland	300	288	96% (94%, 98%)	300	296	99% (98%, 100%)	300	298	99% (98%, 100%)	300	283	94% (91%, 97%)
NHS Orkney	300	255	85% (81%, 89%)	300	260	87% (83%, 91%)	300	297	99% (98%, 100%)	300	285	95% (93%, 97%)
NHS Lothian	300	279	93% (90%, 96%)	300	279	93% (90%, 96%)	300	281	94% (91%, 97%)	300	261	87% (83%, 91%)
NHS Lanarkshire	300	278	93% (90%, 96%)	300	280	93% (90%, 96%)	300	269	90% (87%, 93%)	300	286	95% (93%, 97%)
NHS Highland	300	261	87% (83%, 91%)	300	274	91% (88%, 94%)	300	277	92% (89%, 95%)	300	288	96% (94%, 98%)
NHS Greater Glasgow & Clyde	300	264	88% (84%, 92%)	300	280	93% (90%, 96%)	300	280	93% (90%, 96%)	300	279	93% (90%, 96%)
NHS Grampian	300	286	95% (93%, 97%)	300	284	95% (92%, 98%)	300	275	92% (89%, 95%)	300	254	85% (81%, 89%)
NHS Forth Valley	300	294	98% (96%, 100%)	300	293	98% (96%, 100%)	300	295	98% (97%, 99%)	300	296	99% (98%, 100%)
NHS Fife	300	292	97% (95%, 99%)	300	286	95% (93%, 97%)	300	285	95% (93%, 97%)	300	295	98% (97%, 99%)
NHS Dumfries & Galloway	300	282	94% (91%, 97%)	300	278	93% (90%, 96%)	300	290	97% (95%, 99%)	300	288	96% (94%, 98%)
NHS Borders	300	287	96% (94%, 98%)	300	284	95% (92%, 98%)	300	277	92% (89%, 95%)	300	286	95% (93%, 97%)
NHS Ayrshire & Arran	300	280	93% (90%, 96%)	300	276	92% (89%, 95%)	300	280	93% (90%, 96%)	300	290	97% (95%, 99%)
National Waiting Times Centre	300	283	94% (91%, 97%)	300	280	93% (90%, 96%)	300	282	94% (91%, 97%)	300	285	95% (93%, 97%)

*Opps Obs = opportunities observed

**Opps Taken = opportunities taken



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