



National Public Health
Service for Wales

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Gwasanaeth Heintiau a Chlefydau Trosglwyddadwy

Welsh Healthcare Associated Infections Programme (WHAIP)
Rhaglen Heintiau sy'n Gysylltiedig a Gofal Iechyd Cymru (RHGGIC)

All Wales

Mandatory *Clostridium difficile* Surveillance

01/01/08 - 31/12/08

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The Temple of Peace & Health, Cathays Park, Cardiff, CF10 3NW
Y Deml Heddwch ac Iechyd, Parc Cathays, Caerdydd, CF10 3NW
Tel/Ffon: 029 2040 2473
Fax:/Ffacs: 029 2040 2526



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Introduction

Mandatory surveillance of *Clostridium difficile* in inpatients aged over 65 with diarrhoea in Welsh hospitals was introduced by the Welsh Assembly Government in January 2005. This is the 8th report of the surveillance scheme and covers the period 01/01/2008 to 31/12/2008. Following the Trust re-organisations in Wales from April 2008, this report has been updated to include the following:

1. Tabulated numbers of *C. difficile* and rates per 1000 admissions by new NHS Trust in Wales for the period 01/01/2008 to 31/12/2008, although it should be noted that some of this time period was before the Trust mergers.
2. Tabulated numbers of *C. difficile* and rates per 1000 admissions by patient age and gender for the period 01/01/2008 to 31/12/2008.
3. Tabulated numbers of *C. difficile* and rates per 1000 admissions for the 10 hospital specialties with the highest number of reports of *C. difficile* for the period 01/01/2008 to 31/12/2008.
4. Monthly rates of *C. difficile* per 1000 admissions for all Wales for the period 01/01/2005 to 31/12/2008, presented in the form of statistical process control charts (explained in the notes for interpretation). Trust SPC charts have also been provided for the same period for those trusts which did not change configuration in 2008. SPC charts for the new trusts will be provided when sufficient data is available.
5. Tabulated annual numbers and rates of *C. difficile* for the 4 years that the surveillance has been running.
6. Numbers of *C. difficile* in inpatients aged 2 to 65 by new NHS Trust in Wales for the period 01/01/2008 to 31/12/2008, although it should be noted that some of this time period was before the Trust mergers.

The National *C. difficile* Standards Group Report to the Department of Health (Journal of Hospital Infection, Vol. 56 (suppl. 1), February 2004) states that the diagnosis of *C. difficile* Associated Diarrhoea (CDAD) requires the detection of *C. difficile* toxins in diarrhoeal stool samples. Therefore, surveillance in Wales is restricted to *C. difficile* in inpatients with diarrhoea. However, very few laboratories are currently able to provide us with information on faecal consistency. To ensure comparability between sites, data from all positive *C. difficile* results from inpatients aged over 65 regardless of faecal consistency, have been presented.

The total *C. difficile* rate per 1000 admissions in inpatients aged over 65 in Wales for 2008 was 17.05, ranging from 10.4 to 27.5. The number of *C. difficile* reported in 2008 was 2% higher than in 2007, and the rate has risen from 16.92 per 1000 admissions in 2007. The all Wales rate was above the upper control limit for January to April and June of 2008.

Rates in females aged over 65 were higher than in males and in general rates increased with increasing age. The highest numbers of *C. difficile* were reported from the specialties of general medicine and geriatric medicine. In the 10 specialties with the highest numbers of *C. difficile* in the over 65s, the highest rates were in nephrology (76.83) and geriatric medicine (46.91).

In 2008, numbers of *C. difficile* from inpatients aged 2 to 65 represented 18% of the total numbers of *C. difficile* from hospital inpatients.

The most recently published data from the mandatory *C. difficile* reporting scheme for hospital Trusts in England are for up to September 2008 and are available from the HPA website (http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1195733750761)

Data from the Scottish *C. difficile* surveillance scheme has been reported up to September 2008 and are available on the Health Protection Scotland website (<http://www.hps.scot.nhs.uk/ewr/article.aspx>).

This report will also be distributed to the Medical Directors and Chief Executives of Welsh NHS Trusts.

Notes for Interpretation of *C. difficile* Data

1. The report covers isolates with specimen dates in the period 01/01/2008 to 31/12/2008.
2. Reports of *C. difficile* were obtained by automatic extraction from laboratory information systems via Datastore.
3. All faecal consistencies have been included to ensure comparability between laboratories, since at this time very few laboratories were able to provide faecal consistencies.
4. Reports of *C. difficile* have been deduplicated: any positive *C. difficile* reports occurring within 28 days of another positive *C. difficile* report from the same patient have been excluded from the data set.
5. The denominator data used are admissions to Welsh hospitals aged over 65. The data was obtained from the Health Solutions Wales database, PEDW, and is specific to the time period of the report.
6. Rates by Trust include numerator and denominator data from all hospitals in the Trust.
7. Laboratories should test specimens for *C. difficile* using either an immunoassay detecting both toxin A and toxin B, or a neutralised cell toxicity assay. One laboratory is currently only testing for toxin A, therefore this may have resulted in a small number of *C. difficile* cases not being identified.
8. The median is the rate in the middle of all the rates, when ordered from lowest to highest.
9. Monthly trend data for Wales and for some Trusts are presented in the form of statistical process control charts. SPC charts assume that rates within a Trust/hospital will be largely similar over time. They allow the distinction between natural variation (rates that fall within the limits) and special cause variation, where something unusual is occurring in a Trust (rates that fall outside the limits). A rate that falls outside the control limits and also certain patterns in the Trend data should lead to a search for the explanation for the situation, which has resulted in the outlier rate or pattern. This could be the result of either a true high or low rate of *C. difficile* or due to reporting biases e.g. incomplete reporting or over-reporting. Further information about SPC charts has been provided previously.
10. Data represents *C. difficile* diagnosed in a Trust/hospital; the *C. difficile* was not necessarily acquired in that Trust/hospital.
11. Trusts/hospitals vary in their case mix. Differences in numbers of patients with increased vulnerability to *C. difficile* may contribute to differences in rates in different locations.

***Clostridium difficile* surveillance in hospital inpatients aged >65**

Surveillance Period: 01/01/2008 – 31/12/2008

Table 1. All Wales Rates per 1000 Admissions

	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
All Wales Rate	3002	176108	17.05
All Wales min	15	811	10.37
All Wales max	691	34936	27.46
All Wales average	334	19567	16.43
All Wales median	245	21673	15.26

Table 2. All Wales Rates per 1000 Admissions by Patient Age Group

Age Group	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
66-75	705	67700	10.41
76-85	1359	72098	18.85
86-95	890	33918	26.24
96+	48	2392	20.07

Table 3. All Wales Rates per 1000 Admissions by Patient Gender

Patient Gender	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
Female	1774	94845	18.70
Male	1225	81251	15.08

Table 4. All Wales Rates per 1000 Admissions by Hospital Specialty for the 10 specialties with the highest numbers of *C. difficile* reports

Specialty	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
General Medicine	1328	70330	18.88
Geriatric Medicine	402	8570	46.91
General Surgery	224	23179	9.66
Trauma & Orthopaedic	154	20105	7.66
Nephrology	122	1588	76.83
GP Other Than Maternity	66	5184	12.73
Urology	55	8328	6.60
Gastroenterology	51	3058	16.68
Rehabilitation	44	4425	9.94
Cardiology	42	7136	5.89
Others	213		
Not Known	301		

MONTHLY TREND DATA
01/01/08 – 31/12/08

All Wales

**Monthly Trend Data
01/01/08 - 31/12/08
&
Annual Trend Data
2005 - 2008**

Number of *C. difficile* reports in hospital inpatients aged over 65 and rate per 1000 hospital admissions by month in Wales

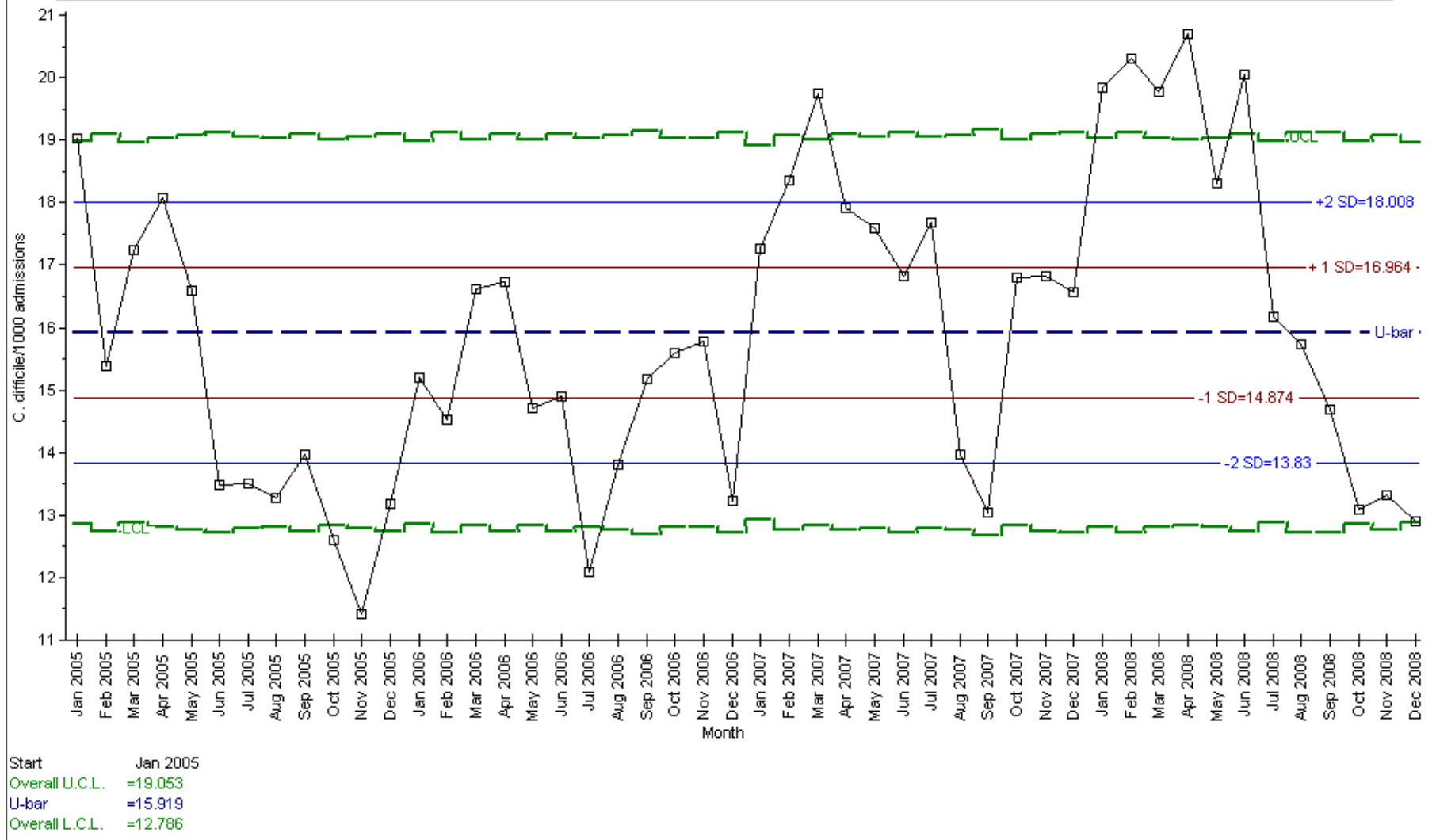
Year	Month	No. <i>C. difficile</i>	No. Admissions	Rate/1000 Admissions
2008	1	294	14827	19.83
	2	284	13990	20.30
	3	292	14764	19.78
	4	312	15074	20.70
	5	271	14808	18.30
	6	283	14116	20.05
	7	249	15392	16.18
	8	219	13918	15.74
	9	206	14014	14.70
	10	200	15282	13.09
	11	192	14411	13.32
	12	200	15512	12.89

Number of *C. difficile* reports in hospital inpatients aged over 65 and rate per 1000 hospital admissions by year in Wales

Year	No. <i>C. difficile</i>	Rate/1000 Admissions
2005*	2614	14.84
2006*	2590	14.87
2007*	2944	16.92
2008	3002	17.05

*NB Data from these years may have been updated since the reports for these time periods were originally published.

Monthly rates of Clostridium difficile in inpatients aged over 65 per 1000 admissions in over 65s in Wales, 01/01/05 - 31/12/08



**Numbers of *Clostridium difficile* in hospital inpatients aged 2 and over in Wales,
01/01/08 – 31/12/08**

	Numbers of <i>C. difficile</i>		
	Age 2 - 65	Age >65	Total
All Wales	663	3002	3665