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Service for Wales
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Cenedlaethol Cymru

Infection and Communicable Disease Service
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

01/07/06 – 30/06/07

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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 5th report of the surveillance scheme and covers the period 01/07/2006 to 30/06/2007.

The report contains the following:

1. Tabulated numbers of *C. difficile* and rates per 1000 admissions by NHS Trust in Wales for the period 01/07/2006 to 30/06/2007.
2. Tabulated numbers of *C. difficile* and rates per 1000 admissions by patient age and gender for the period 01/07/2006 to 30/06/2007.
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 01/07/2006 to 30/06/2007.
4. Monthly rates of *C. difficile* per 1000 admissions for all Wales and for individual Welsh Trusts presented in the form of statistical process control charts (explained in the notes for interpretation) for the period 01/01/2005 to 30/06/2007.

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 the period 01/07/2006 to 30/06/2007 was 16.16, ranging from 6.37 to 37.28. The rate for the equivalent period last year was 13.74. The rate for Wales went above the upper control limit in March 2007, but has since reduced. Rates in females were significantly 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*, the highest rates were in nephrology (75.55) and geriatric medicine (73.56).

The most recently published data from the mandatory *C. difficile* reporting scheme for hospital Trusts in England are for up to March 2007. Rates for English hospital Trusts are not directly comparable with Welsh data because the English surveillance scheme now covers all positive results from patients over 2 years old. It also includes *C. difficile* results from the community as well as from hospital inpatients and the denominator data used is bed days in the 65+ age group. Bed day data are not available by patient age group for Wales, therefore admissions in the over 65s have been used as denominator data. The English data are available at: http://www.hpa.org.uk/infections/topics_az/Clostridium_difficile/C_diff_mandatory_reports.htm.

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 01/07/2006 to 30/06/2007.
2. Reports of *C. difficile* were obtained by automatic extraction from laboratory information systems via Datastore for all laboratories in Wales that have Datastore. One laboratory provided us with an electronic file from their laboratory system.
3. Only reports from hospital inpatients aged over 65 have been included.
4. All faecal consistencies have been included to ensure comparability between laboratories, since at this time very few laboratories were able to provide faecal consistencies.
5. 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.
6. 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.
7. Rates by Trust include numerator and denominator data from all hospitals in the Trust.
8. 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.
9. The median is the rate in the middle of all the rates, when ordered from lowest to highest.
10. Monthly trend data for Wales and for individual Trusts are presented in the form of statistical process control charts. SPC charts assume that rates within a Trust 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.
11. Data represents *C. difficile* diagnosed in a Trust; the *C. difficile* was not necessarily acquired in that Trust.
12. Trusts 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: 01/07/2006 – 30/06/2007

Table 1. Rates per 1000 admissions by NHS Trust

Trust name	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
All Wales Rate	2811	173956	16.16
All Wales min	15	924	6.37
All Wales max	539	32108	37.28
All Wales average	200.79	12425.43	15.37
All Wales median	164	11460	14.52

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

Age group	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
66-75	636	69018	9.21
76-85	1335	71892	18.57
86-95	787	30874	25.49
96+	53	2172	24.40

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

Patient Gender	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
Female	1689	94257	17.92
Male	1122	79699	14.08

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

Specialty	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
General Medicine	1120	69972	16.01
Geriatric Medicine	607	8252	73.56
General Surgery	192	23329	8.23
Trauma & Orthopaedics	142	18662	7.61
Nephrology	89	1178	75.55
GP Other Than Maternity	44	5090	8.64
Cardiology	44	6891	6.39
Urology	39	7953	4.90
Gastroenterology	31	2612	11.87
Haematology	30	1362	22.03
Others	215		
Not Known	258		

TREND DATA

01/07/06 – 30/06/07

**All Wales
Monthly Trend Data**

01/07/06 – 30/06/07

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
2006	7	177	14722	12.02
	8	198	14347	13.80
	9	206	13696	15.04
	10	232*	14860	15.61
	11	234*	14757	15.86
	12	185	13619	13.58
2007	1	277	16022	17.29
	2	262	14295	18.33
	3	297	14942	19.88
	4	254	14278	17.79
	5	257	14629	17.57
	6	232	13789	16.83

* These data have been updated since the previous report

