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CLOSTRIDIUM DIFFICILE

MANDATORY SURVEILLANCE REPORT

01/01/09 – 31/12/09

ALL WALES

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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 10th report of the surveillance scheme and covers the period 01/01/2009 to 31/12/2009. The report has been updated to reflect the new structure of the NHS in Wales, although some of the data collection period was before the establishment of the new Health Boards. The report contains:

1. Tabulated numbers of *C. difficile* and rates per 1000 admissions by Health Board in Wales for the period 01/01/2009 to 31/12/2009.
2. Tabulated numbers of *C. difficile* and rates per 1000 admissions by patient age and gender for the period 01/01/2009 to 31/12/2009.
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 01/01/2009 to 31/12/2009.
4. Tabulated monthly numbers and rates of *C. difficile* per 1000 admissions for all Wales, by Health Board and by major acute hospital for the period 01/01/2009 to 31/12/2009.
5. Tabulated annual numbers and rates of *C. difficile* per 1000 admissions for all Wales and by major acute hospital for the period for 2005 to 2009. Annual data has also been provided for the Health Boards that did not change structure in April 2008.
6. Monthly rates of *C. difficile* per 1000 admissions for all Wales, by Health Board and by major acute hospital, presented in the form of statistical process control charts (explained in the notes for interpretation) from 01/01/2009 to 31/12/2009, although some of the Health Boards SPC are only provided from 01/04/2008.
7. Numbers of *C. difficile* in inpatients aged 2 to 65 by Health Board in Wales for the period 01/01/2009 to 31/12/2009.

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 01/01/2009 to 31/12/2009 was 15.13, ranging from 6.59 to 22.41. The all Wales rate was on or above the upper control limit in January and February 2009 and below the lower control limit in August. The rate for 2008 was 17.05 per 1000 admissions.

Rates in females aged over 65 were higher than in males and 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 (54.37) and geriatric medicine (40.79).

In the period 01/01/2009 to 31/12/2009, numbers of *C. difficile* from inpatients aged 2 to 65 represented 17% of the total numbers of *C. difficile* from hospital inpatients.

Data from the English *C. difficile* surveillance scheme has been reported up to March 2010 and is available on the HPA website:
http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1254510678961

Data from the Scottish *C. difficile* surveillance scheme has been reported up to December 2009 and is available on the Health Protection Scotland website:
<http://www.hps.scot.nhs.uk/ewr/article.aspx>

Data from the Northern Ireland *C. difficile* surveillance scheme has been reported up to March 2010 and is available on the Public Health Agency Northern Ireland website
<http://www.cdscni.org.uk/publications/QuarterlyReports/CdiffMar10.pdf>

This report will also be distributed to the Welsh Assembly Government, Medical Directors and Chief Executives of Health Boards.

Notes for Interpretation of *C. difficile* Data

1. The report covers isolates with specimen dates in the period 01/01/2009 to 31/12/2009.
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, for major acute hospitals 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/hospital (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: 01/01/2009 - 31/12/2009

Table 1. All Wales Rates per 1000 admissions

	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
All Wales Rate	2654	175457	15.13
All Wales min	14	772	6.59
All Wales max	802	41384	22.41
All Wales average	332	21932	14.54
All Wales median	336	21920	14.33

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

Age Group	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
66-75	571	67797	8.42
76-85	1166	70737	16.48
86-95	841	34464	24.40
96+	76	2606	29.16

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

Patient Gender	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
Female	1542	93951	16.41
Male	1112	81503	13.64

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	1105	68459	16.14
Geriatric Medicine	339	8310	40.79
General Surgery	187	22644	8.26
Trauma/Orthopaedics	126	20202	6.24
Nephrology	102	1876	54.37
GP Other than maternity	64	4631	13.82
Urology	63	7984	7.89
Rehabilitation	49	4096	11.96
Gastroenterology	41	3497	11.72
Cardiology	29	8143	3.56
Others	197		
Not Known	352		

Trend Data

All Wales

**Monthly Trend Data
01/01/09 - 31/12/09
&
Annual Trend Data
2005-2009**

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

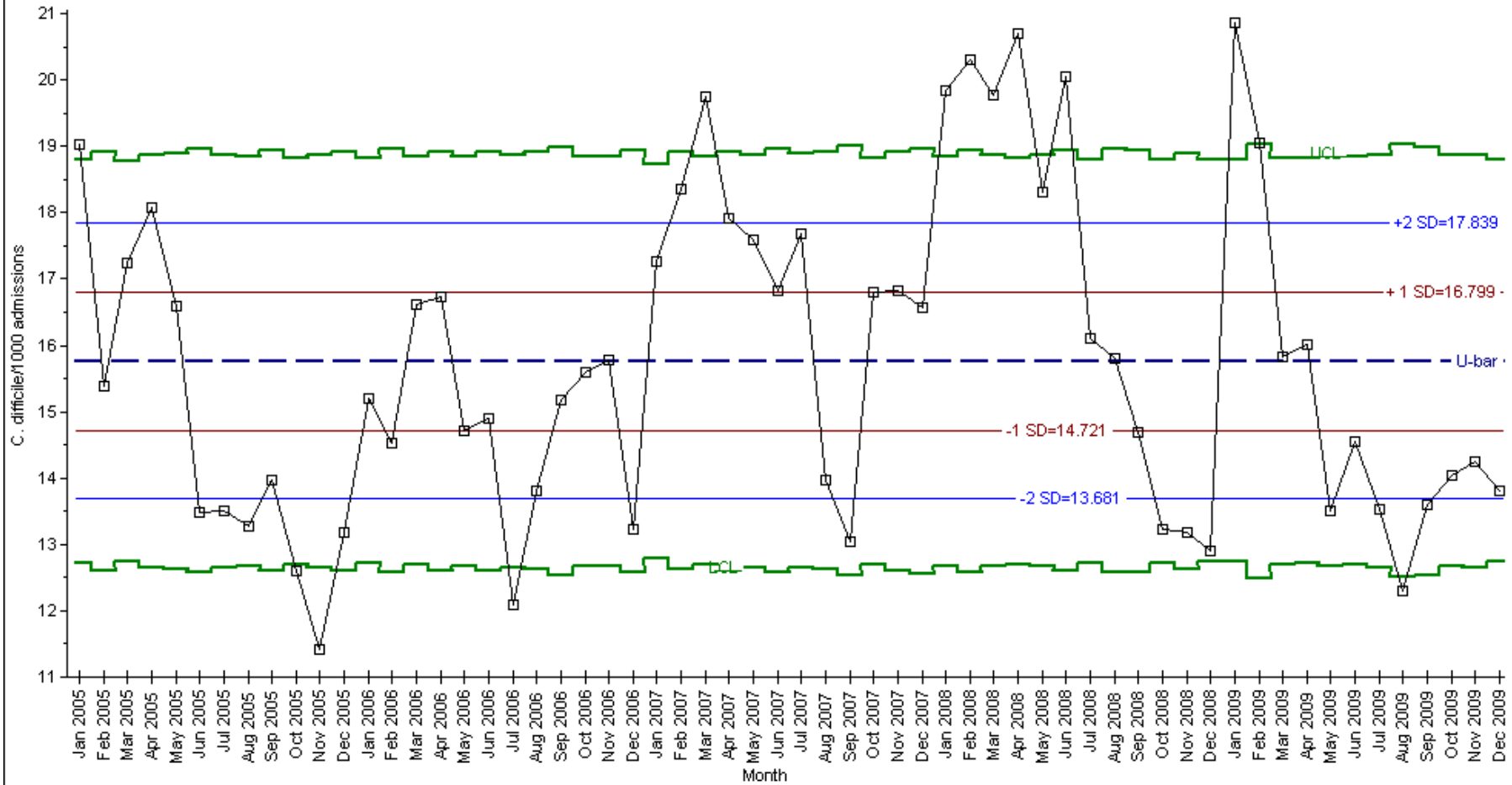
Year	Month	No. <i>C. difficile</i>	No. Admissions	Rate/1000 Admissions
2009	1	322	15437	20.86
	2	252	13225	19.05
	3	240	15168	15.82
	4	244	15244	16.01
	5	201	14876	13.51
	6	218	14991	14.54
	7	199	14713	13.53
	8	164	13330	12.30
	9	185	13606	13.60
	10	208	14818	14.04
	11	208	14610	14.24
	12	213	15439	13.80

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
2009	2654	15.13

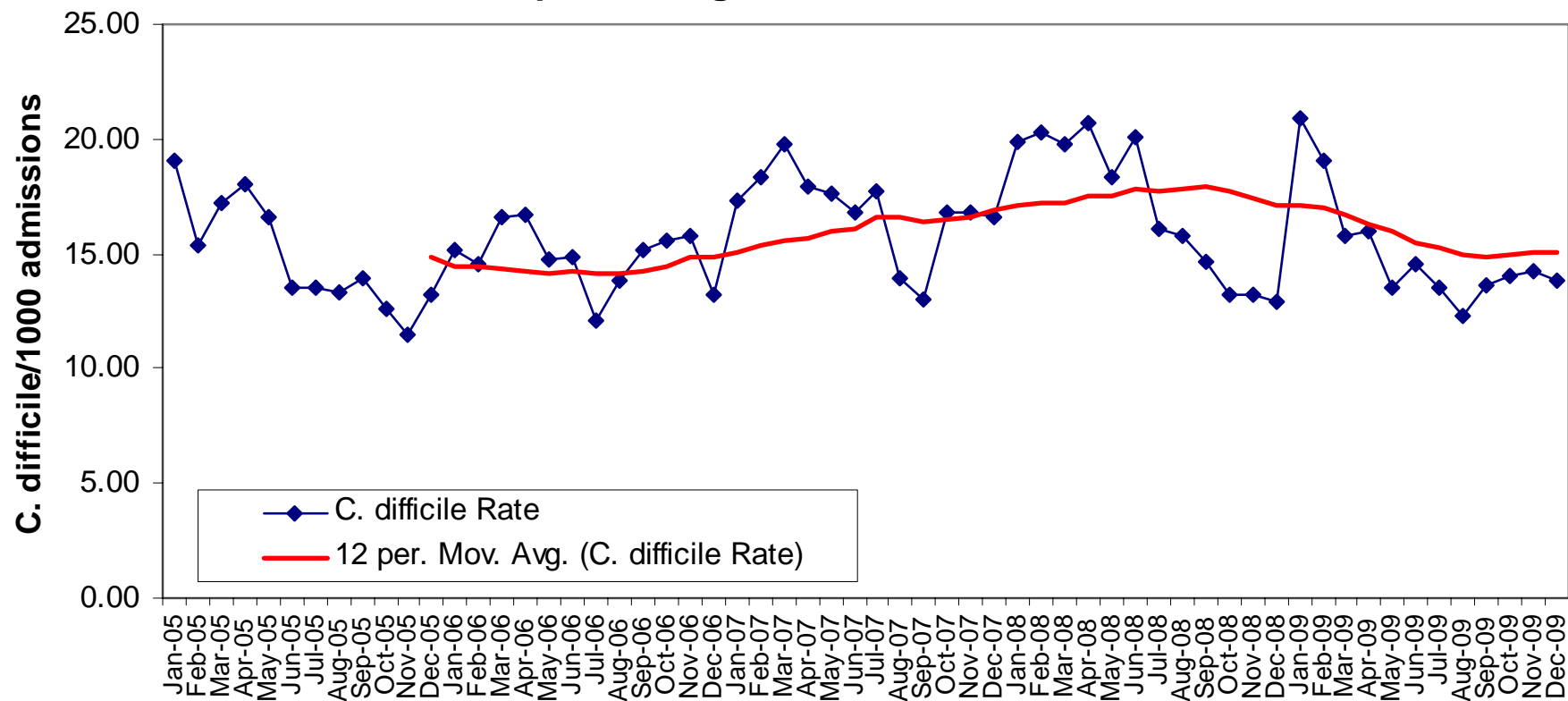
*NB Data from these years may have been updated since the reports for these time periods were originally published.

Monthly rates of Clostridium difficile in inpatients aged over 65 per 1000 admissions in over 65s in Wales, 01/01/05 - 31/12/09



Start Jan 2005
 Overall U.C.L. =18.878
 U-bar =15.760
 Overall L.C.L. =12.643

Monthly rate and 12 month moving average rate of *C. difficile* per 1000 admissions in inpatients aged >65 in Wales, 01/01/05 - 31/12/09



Numbers of *Clostridium difficile* in hospital inpatients aged 2 and over in Wales, 01/01/09 – 31/12/09

	Numbers of <i>C. difficile</i>		
	Age 2 - 65	Age >65	Total
All Wales	532	2654	3186