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# ***CLOSTRIDIUM DIFFICILE***

## **MANDATORY SURVEILLANCE REPORT**

01/04/09 – 31/03/10

**ANEURIN BEVAN HEALTH BOARD**

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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 11<sup>th</sup> report of the surveillance scheme and covers the period 01/04/2009 to 31/03/2010. A report for this time period has been provided to transfer the *C. difficile* surveillance reports from a calendar year schedule to a financial year schedule, to match the AOF target period. 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 01/04/2009 to 31/03/2010.
2. Tabulated numbers of *C. difficile* and rates per 1000 admissions by patient age and gender for the period 01/04/2009 to 31/03/2010.
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 01/04/2009 to 31/03/2010.
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 01/04/2009 to 31/03/2010.
5. 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 01/01/2005 to 31/03/2010, although some of the Health Boards SPC are only provided from 01/04/2008.
6. Numbers of *C. difficile* in inpatients aged 2 to 65 by Health Board in Wales for the period 01/04/2009 to 31/03/2010.

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 01/04/2009 to 31/03/2010 was

15.02, ranging from 6.64 to 24.11. The all Wales rate was on or above the upper control limit in January and February 2010 and below the lower control limit in August 2009.

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 (48.51) and geriatric medicine (38.03).

In the period 01/04/2009 to 31/03/2010, numbers of *C. difficile* from inpatients aged 2 to 65 represented 16% of the total numbers of *C. difficile* from hospital inpatients.

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

Data from the Scottish *C. difficile* surveillance scheme has been reported up to March 2010 and is available on the Health Protection Scotland website:  
<http://www.hps.scot.nhs.uk/haic/sshaip/wrdetail.aspx?id=45178>

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 01/04/2009 to 31/03/2010.
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. However, admissions for Jan-Mar 2010 were unavailable at the time of report production so admissions for Jan-Mar 2009 have been used as a proxy.
6. Rates by Health Board include numerator and denominator data from all hospitals in the Health Board.
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 Health Board/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 Health Board/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 Health Board/hospital; the *C. difficile* was not necessarily acquired in that Trust/hospital.

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

**Surveillance Period: 01/04/2009 - 31/03/2010**

**Table 1. Rates per 1000 admissions by Health Board**

<b>Health Board</b>	<b><i>C. difficile</i></b>	<b>Admissions</b>	<b>Rate/1000 Admissions</b>
Aneurin Bevan	518	32667	15.86
<b>All Wales Rate</b>	<b>2635</b>	<b>175457</b>	<b>15.02</b>
All Wales min	15	772	6.64
All Wales max	728	41384	24.11
All Wales average	329	21932	14.91
All Wales median	329	21920	13.97

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

<b>Age Group</b>	<b><i>C. difficile</i></b>	<b>Admissions</b>	<b>Rate/1000 Admissions</b>
66-75	557	67797	8.22
76-85	1153	70737	16.30
86-95	850	34464	24.66
96+	75	2606	28.78

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

<b>Patient Gender</b>	<b><i>C. difficile</i></b>	<b>Admissions</b>	<b>Rate/1000 Admissions</b>
Female	1553	93951	16.53
Male	1082	81503	13.28

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

<b>Specialty</b>	<b><i>C. difficile</i></b>	<b>Admissions</b>	<b>Rate/1000 Admissions</b>
General Medicine	1118	68459	16.33
Geriatric Medicine	316	8310	38.03
General Surgery	205	22644	9.05
Trauma/Orthopaedics	116	20202	5.74
Nephrology	91	1876	48.51
Urology	71	7984	8.89
GP Other than maternity	45	4631	9.72
Gastroenterology	41	3497	11.72
Rehabilitation	41	4096	10.01
Cardiology	35	8143	4.30
Others	197		
Not Known	359		

# Trend Data



**All Wales**

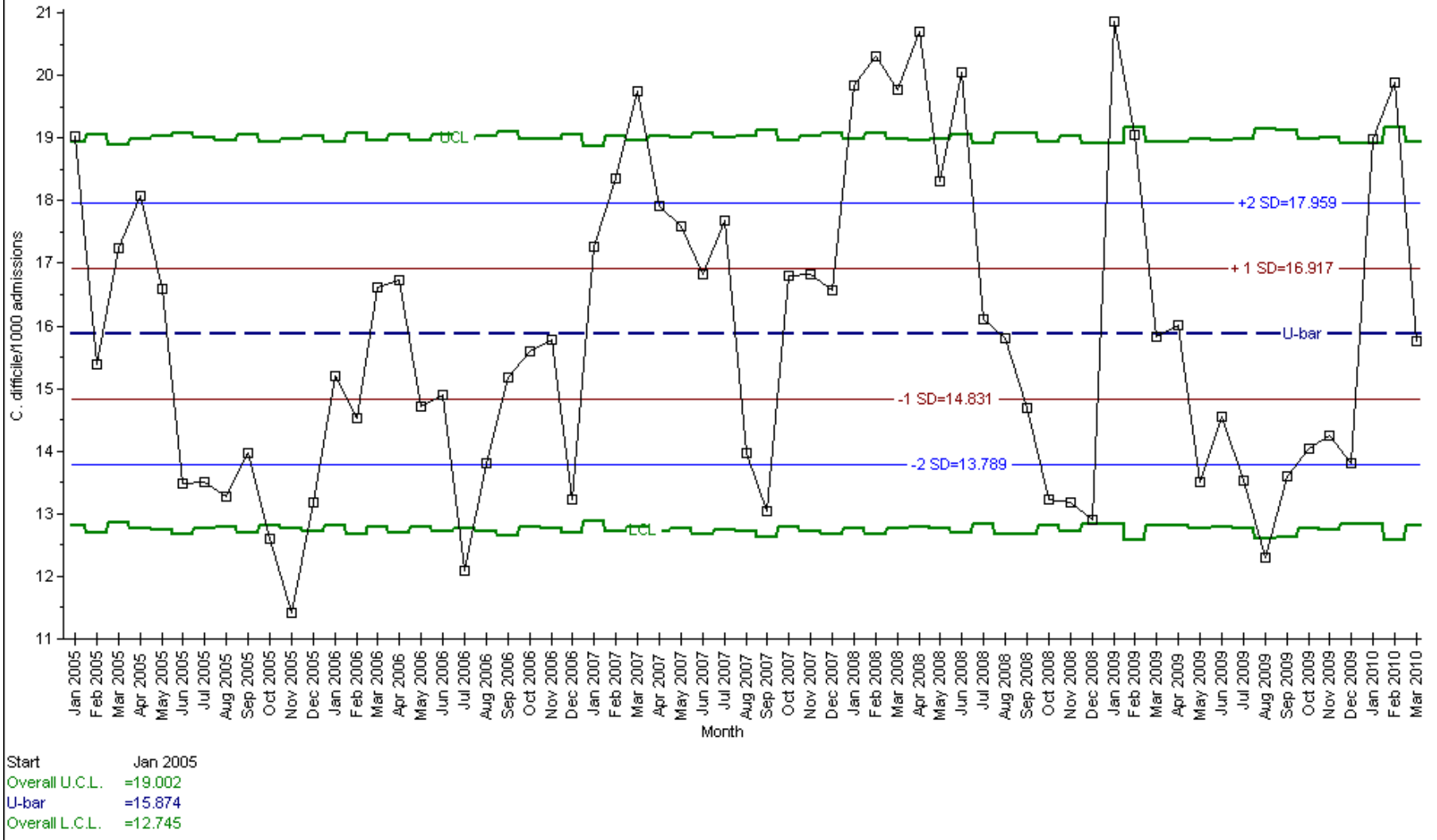
**Monthly Trend Data  
01/04/09 - 31/03/10**

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

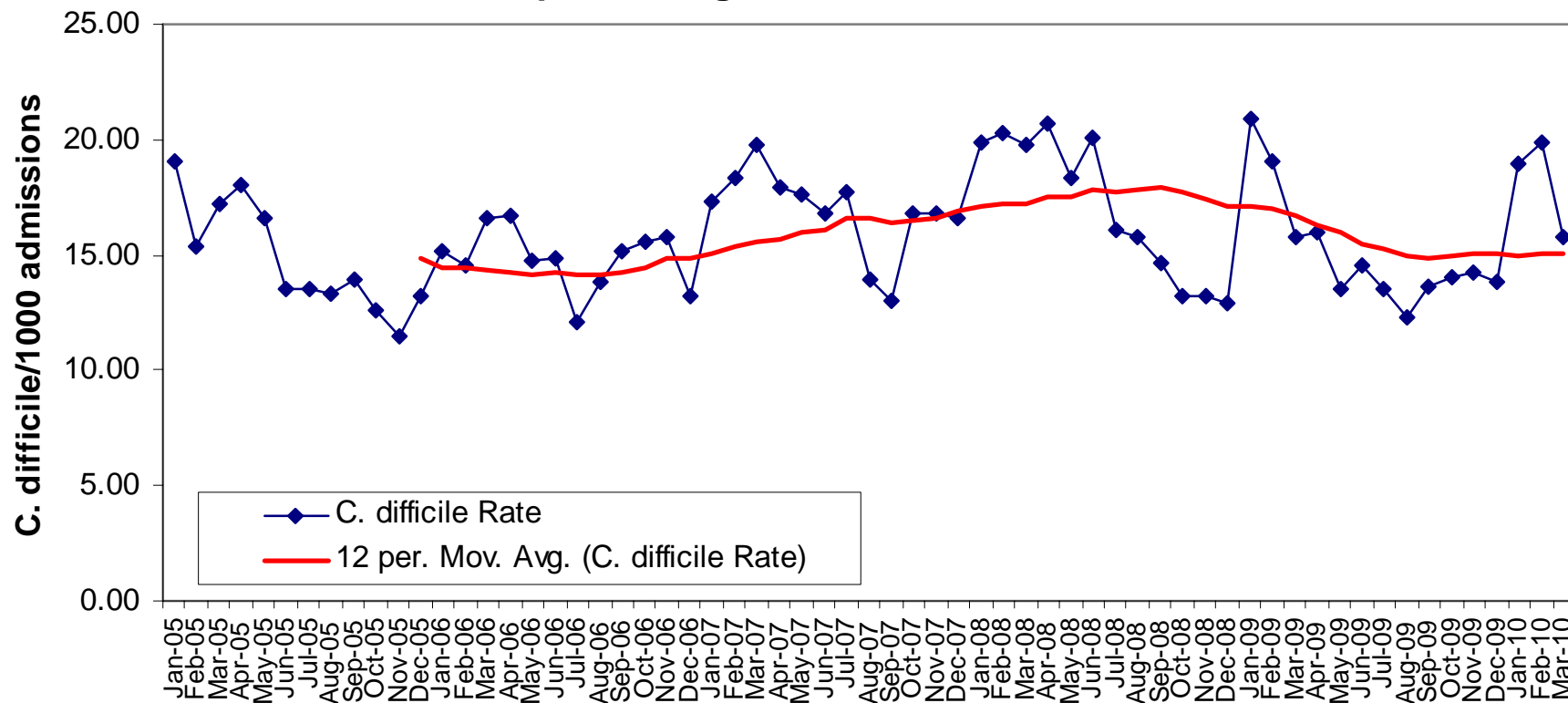
<b>Year</b>	<b>Month</b>	<b>No. <i>C. difficile</i></b>	<b>No. Admissions</b>	<b>Rate/1000 Admissions</b>
2009	4	244	15244	16.01
	5	201	14876	13.51
	6	218	14991	14.54
	7	199	14713	13.53
	8	164	13330	12.30
	9	185	13606	13.60
	10	208	14818	14.04
	11	208	14610	14.24
	12	213	15439	13.80
2010	1	293	15437*	18.98
	2	263	13225*	19.89
	3	239	15168*	15.76

\*Jan – Mar 2009 admissions

Monthly rates of Clostridium difficile in inpatients aged over 65 per 1000 admissions in over 65s in Wales, 01/01/05 - 31/03/10



**Monthly rate and 12 month moving average rate of *C. difficile* per 1000 admissions in inpatients aged >65 in Wales, 01/01/05 - 31/03/10**



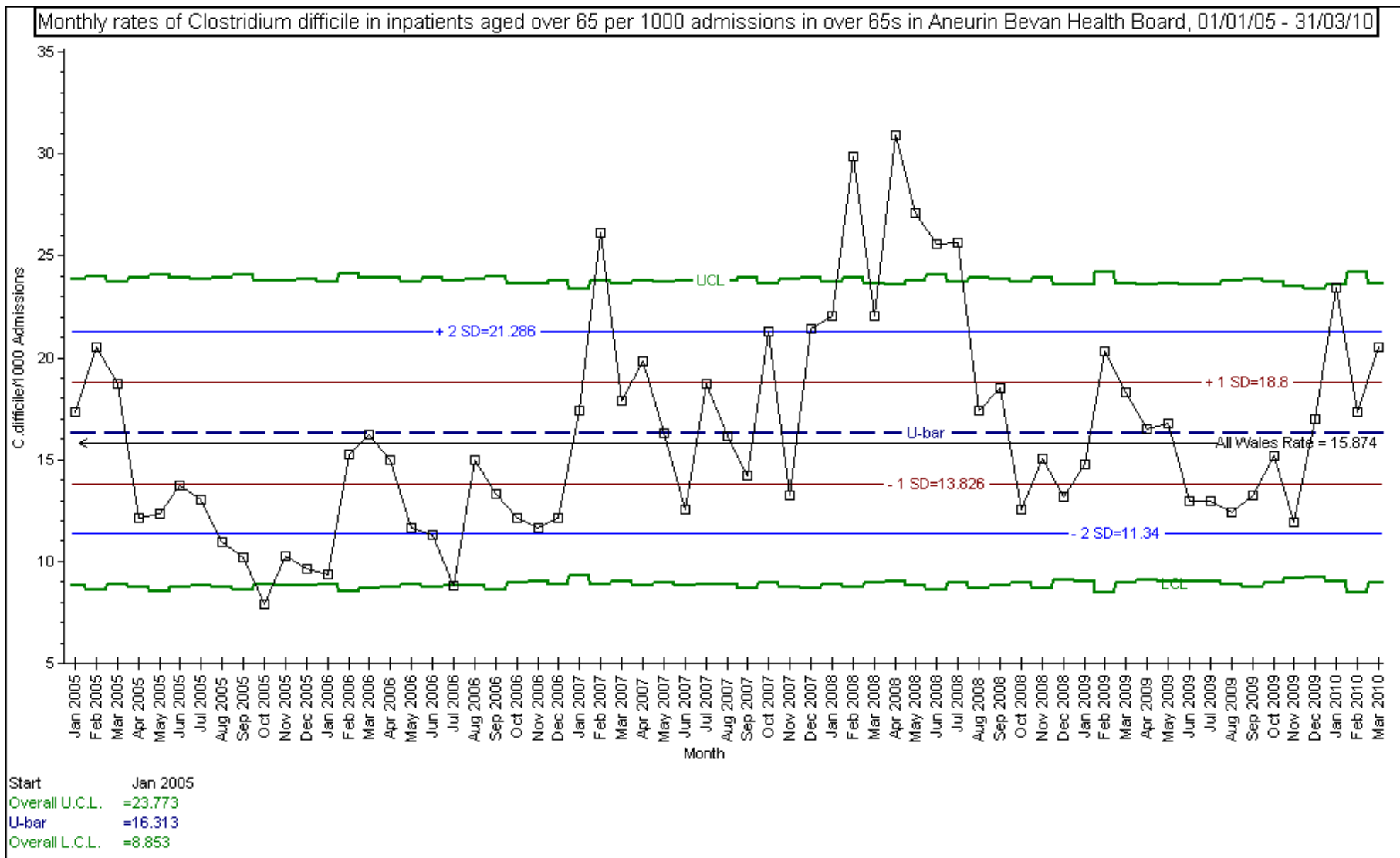
**Aneurin Bevan Health Board**

**Monthly Trend Data  
01/04/09 - 31/03/10**

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

<b>Year</b>	<b>Month</b>	<b>No. <i>C. difficile</i></b>	<b>No. Admissions</b>	<b>Rate/1000 Admissions</b>
2009	4	46	2788	16.50
	5	46	2739	16.79
	6	36	2772	12.99
	7	36	2776	12.97
	8	33	2653	12.44
	9	34	2570	13.23
	10	41	2706	15.15
	11	34	2850	11.93
	12	50	2945	16.98
2010	1	65	2772*	23.45
	2	41	2364*	17.34
	3	56	2732*	20.50

\*Jan – Mar 2009 admissions



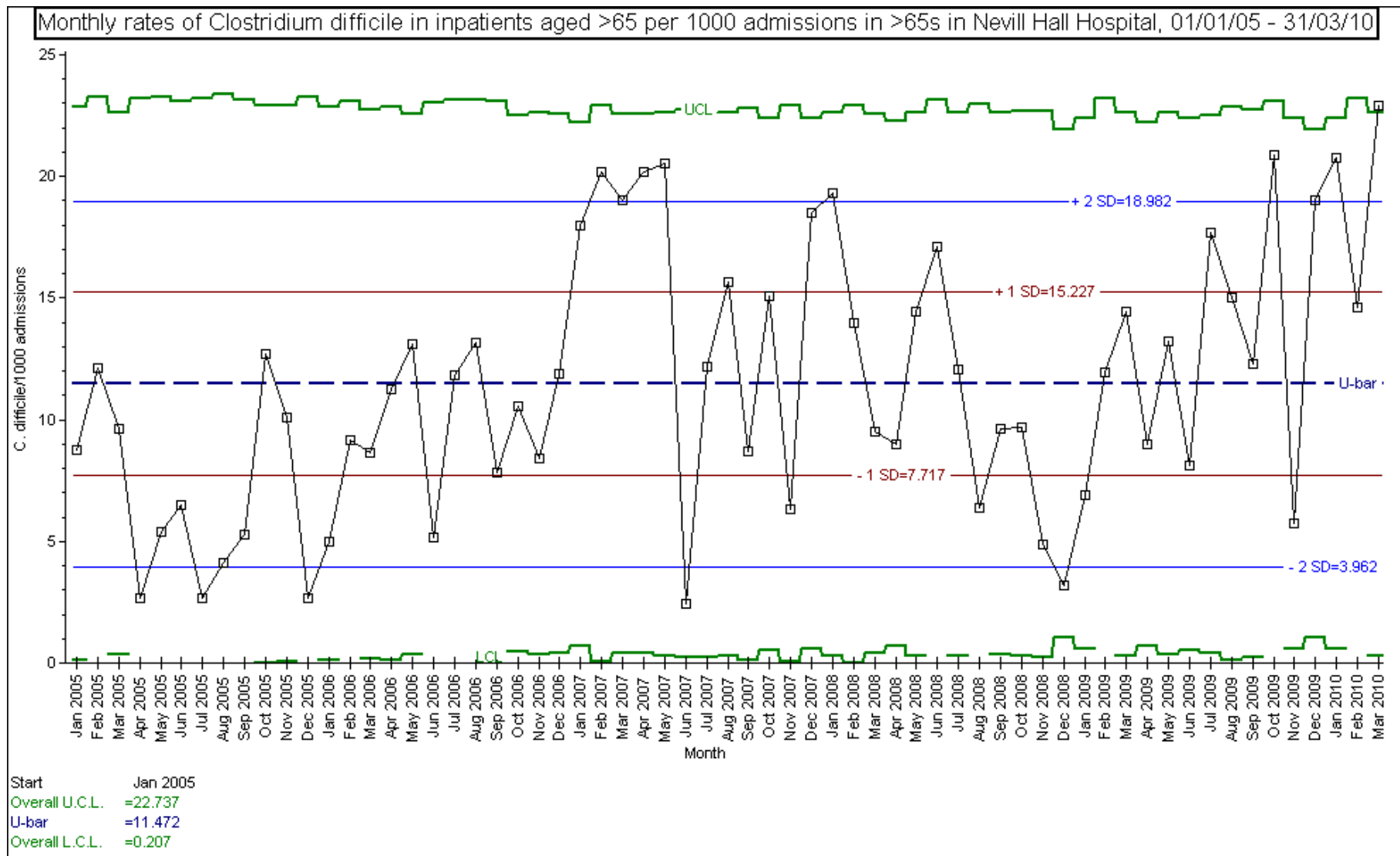
**Nevill Hall Hospital**  
**Monthly Trend Data**  
**01/04/09 - 31/03/10**



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

<b>Year</b>	<b>Month</b>	<b>No. <i>C. difficile</i></b>	<b>No. Admissions</b>	<b>Rate/1000 Admissions</b>
2009	4	8	892	8.97
	5	11	832	13.22
	6	7	863	8.11
	7	15	847	17.71
	8	12	799	15.02
	9	10	815	12.27
	10	16	767	20.86
	11	5	870	5.75
	12	18	946	19.03
2010	1	18	867*	20.76
	2	11	752*	14.63
	3	19	830*	22.89

\* Jan – Mar 2009 admissions



**Royal Gwent Hospital**

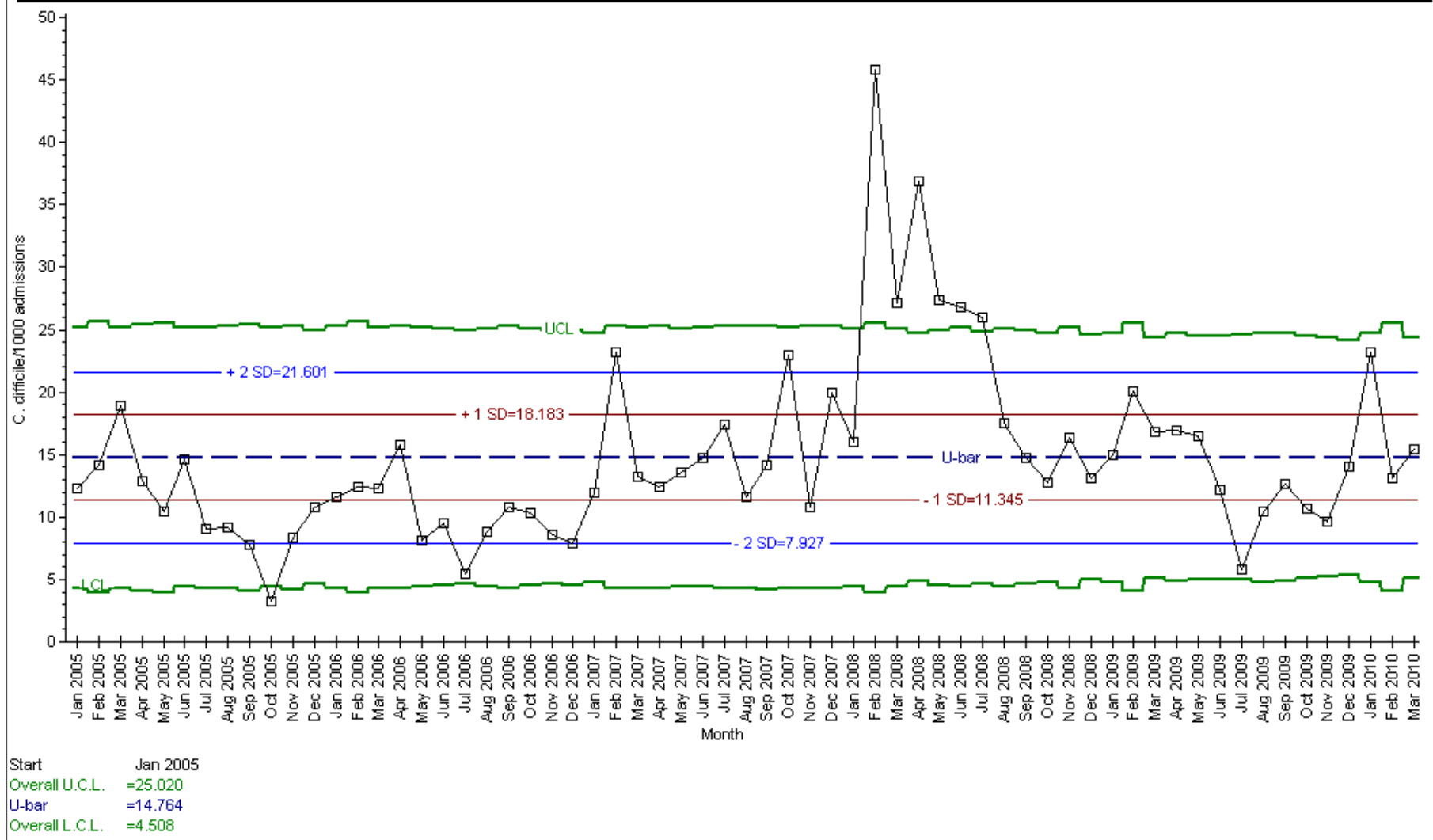
**Monthly Trend Data  
01/04/09 - 31/03/10**

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

<b>Year</b>	<b>Month</b>	<b>No. <i>C. difficile</i></b>	<b>No. Admissions</b>	<b>Rate/1000 Admissions</b>
2009	4	23	1357	16.95
	5	23	1395	16.49
	6	17	1402	12.13
	7	8	1380	5.80
	8	14	1338	10.46
	9	17	1344	12.65
	10	15	1409	10.65
	11	14	1449	9.66
	12	21	1500	14.00
2010	1	31	1333*	23.26
	2	15	1149*	13.05
	3	22	1428*	15.41

\*Jan – Mar 2009 admissions

Monthly rates of Clostridium difficile in inpatients aged >65 per 1000 admissions in >65s in Royal Gwent Hospital, 01/01/05 - 31/03/10



**Numbers of *Clostridium difficile* in hospital inpatients aged 2 and over in Wales, 01/04/09 – 31/03/10**

<b>Health Board</b>	<b>Numbers of <i>C. difficile</i></b>		
	<b>Age 2 - 65</b>	<b>Age &gt;65</b>	<b>Total</b>
Aneurin Bevan Health Board	58	518	576
<b>All Wales</b>	<b>492</b>	<b>2635</b>	<b>3127</b>