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CLOSTRIDIUM DIFFICILE

MANDATORY SURVEILLANCE REPORT

01/05/11 – 31/03/12

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 Government in January 2005. This is the 16th report of the surveillance scheme and covers the period 01/10/2011 to 30/09/2012. From April 2011 data from non-inpatient locations has been collected in Wales and results are provided in the report. The report contains:

1. Tabulated numbers of *C. difficile* and rates per 1000 admissions by Health Board in Wales for the period 01/10/2011 to 30/09/2012.
2. Tabulated numbers of *C. difficile* and rates per 1000 admissions by patient age and gender for the period 01/10/2011 to 30/09/2012.
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 01/10/2011 to 30/09/2012.
4. Numbers of *C. difficile* in inpatients aged 2 to 65 and numbers of *C. difficile* from non-inpatient locations by Health Board in Wales for the period 01/10/2011 to 30/09/2012.
5. 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 01/10/2011 to 30/09/2012.
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 01/01/2005 to 30/09/2012, although some of the Health Boards SPC are only provided from 01/04/2008.

The recent reductions in *C. difficile* in Wales have resulted in the control limits being recalculated for the SPC charts. New control limits were put in place for Wales as a whole from March 2010 but because of further reductions in rate during the 2011/12 financial year another recalculation has been introduced from June 2011. The date of recalculation may vary for individual Health Boards and hospitals depending on when the reductions started. Because of the recalculated control limits it is no longer possible to provide the 1 and 2 SD lines on the control charts.

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 01/10/2011 to 30/09/2012 was 6.43, ranging from 2.91 to 9.55. This compares with an all Wales rate of 8.73 for the Oct 10 to Sep 11.

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 period 01/10/2011 to 30/09/2012, a total of 1418 *C. difficile* were reported from inpatients; numbers from inpatients aged 2 to 65 represented 19% of the total inpatient numbers. An additional 506 *C. difficile* were reported from non-inpatients.

Data from the English *C. difficile* surveillance scheme is available on the HPA website:

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ClostridiumDifficile/>

Data from the Scottish *C. difficile* surveillance scheme is available on the Health Protection Scotland website:

<http://www.hps.scot.nhs.uk/haic/sshaip/clostridiumdifficile.aspx?subjectid=79>

Data from the Northern Ireland *C. difficile* surveillance scheme is available on the Public Health Agency Northern Ireland website

<http://www.publichealth.hscni.net/directorate-public-health/health-protection/healthcare-associated-infections>

This report will also be distributed to the Welsh 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 01/10/2011 to 30/09/2012
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 NHS Wales Informatics Service database, PEDW, and is specific to the time period of the report.
6. Rates by Health Board include numerator and denominator data from all hospitals in the Health Board.
7. During the time period of the report, laboratories in Wales moved from testing specimens for *C. difficile* using a single test (either a toxin A and B enzyme immunoassay or a neutralised cell toxicity assay) to a 2-stage test, incorporating a glutamate dehydrogenase (GDH) assay followed by a toxin enzyme immunoassay. For the 2-stage test, only those specimens that were both GDH and toxin positive were included as positive for *C. difficile*. The change in testing protocol may influence the numbers of *C. difficile* 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 Health Boards 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.

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

Surveillance Period: 01/10/2011 - 30/09/2012

Table 1. All Wales Rate per 1000 Admissions

	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
All Wales Rate	1143	177626	6.43
All Wales min	5	768	2.91
All Wales max	388	40640	9.55
All Wales average	142.88	22203	6.10
All Wales median	138.50	23517	6.27

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

Age Group	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
66-75	243	66653	3.65
76-85	485	70444	6.88
86-95	380	37723	10.07
96+	35	2806	12.47

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

Patient Gender	<i>C. difficile</i>	Admissions	Rate/1000 Admissions
Female	666	95257	6.99
Male	477	82368	5.79

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	419	75870	5.52
Geriatric Medicine	155	7907	19.60
General Surgery	95	22361	4.25
Trauma & Orthopaedic	37	19942	1.86
GP Other	26	3858	6.74
Rehabilitation	26	4110	6.33
Cardiology	25	8045	3.11
Urology	22	7619	2.89
Nephrology	21	1192	17.62
Gastroenterology	17	3367	5.05
Others	79		
Not known	221		

Table 5. Numbers of *Clostridium difficile* in patients aged 2 and over in Wales, 01/10/11 – 30/09/12

	Numbers of <i>C. difficile</i>					
	Inpatients			Non-inpatients*		
	Age 2 - 65	Age >65	Inpatient Total	Age 2 - 65	Age >65	Non-Inpatient Total
All Wales	275	1143	1418	127	379	506

* Non-inpatients include *C. difficile* from non-inpatient wards within hospitals and from community locations such as GPs and nursing homes

Trend Data

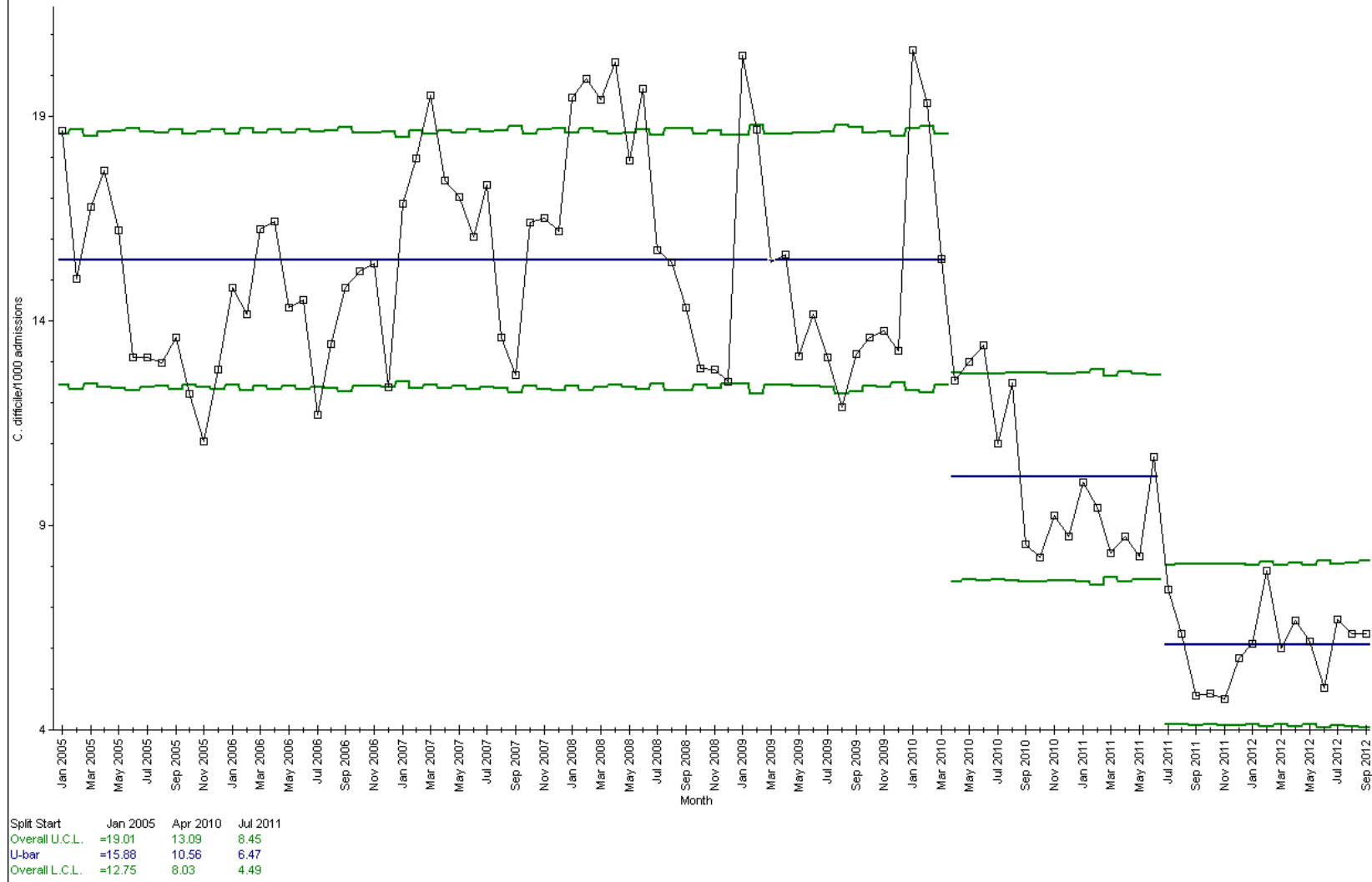
All Wales

**Monthly Trend Data
01/10/11 - 30/09/12**

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
2011	10	80	15144	5.28
	11	77	15003	5.13
	12	92	14962	6.15
2012	1	99	15266	6.48
	2	119	14382	8.27
	3	98	15368	6.38
	4	102	14467	7.05
	5	101	15409	6.55
	6	76	14063	5.40
	7	107	15080	7.10
	8	98	14530	6.74
	9	94	13952	6.74

Monthly rates of Clostridium difficile in inpatients aged over 65 per 1000 admissions in over 65s in Wales, 01/01/05 - 30/09/12



Monthly rates and 12 month moving average rate of *C. difficile* per 1000 admissions in inpatients aged >65 in Wales, 01/01/05 - 30/09/12

