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Welcome to the CDSC Monthly Report - number 5 for 2009!

This edition presents the main findings of enhanced surveillance of Tuberculosis (TB) in NI during 2007. Provisional information for 2008 is also presented. We have included a brief outline of all Mycobacteria infections reported from weeks 13 to 20 (inclusive). We also highlight the main findings of the 2008 Annual Report of Healthcare Associated Infections in NI. There is a summary of human Brucellosis infections reported during 2008 in NI, and an update on annual cases of Creutzfeldt-Jakob Disease (CJD) across the UK.

Tuberculosis

2007 saw an increased number of TB cases notified in NI (66 cases), two thirds of which were pulmonary TB. The proportion of TB cases born outside the UK/Ireland increased (to 53%) and 8 healthcare workers were notified as having TB. Provisional data suggest that 58 cases of TB were notified in NI during 2008, half being pulmonary TB. The majority of TB infections in both years were identified as *M. tuberculosis* in type. The overall rate of pulmonary TB in NI continues to decline since 2004, while the rate of non-pulmonary TB is exhibiting an overall upward trend. A total of 5 *M. tuberculosis* isolates in each year were drug-resistant, with 3 isolates in 2007 identified as multi-drug resistant.

Pandemic (H1N1) 2009 Influenza

The 4th 'Pandemic (H1N1) 2009' Influenza weekly update was published by CDSC on 2nd July. This update presents the main epidemiological features of the first 38 cases identified during the containment phase in NI – 23 males/15 female cases; mean age: 30 yrs; 31 cases with travel history; 6 secondary and 1 tertiary case; 2 cases identified in hospital. This 4th weekly update is the final Pandemic (H1N1) 2009 Influenza update in the current format. Henceforth epidemiologic information on cases will be included in the usual CDSC weekly influenza surveillance bulletin.

On 2nd July, NI moved out of containment to treatment in responding to and managing the current pandemic. This move was undertaken in line with the rest of the UK. The main features of this change include cessation of contact tracing and chemoprophylaxis, and the provision of antiviral medication on the basis of clinical diagnosis. Clinicians are advised to give antivirals to symptomatic patients in 'at risk groups' ideally within 48 hours of symptom onset. Further information on this 'treatment phase' is outlined in two recent CMO letters which can be accessed at:-

http://www.dhsspsni.gov.uk/index/phealth/professional/cmo_communications/letters-and-urgent-communications-2009.htm



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Enhanced surveillance of Tuberculosis

1. Summary 2007

- There were 66 tuberculosis cases notified in 2007, giving a Northern Ireland rate of 3.75/100,000 population. This contrasts with 61 notifications in 2006 (3.5/100,000).
- Forty-two (64%) cases had pulmonary TB of which 21 (50%) were smear positive.
- The Southern Health and Social Services Board (SHSSB) had the highest rate of TB in 2007 of 5.3/100,000.
- The proportion of cases diagnosed with TB during 2007 born outside the UK/Ireland was 53% - an increase from 2006 (38% born abroad).
- Eight healthcare workers were notified with tuberculosis.
- There was one culture confirmed case of *M. bovis*.

A total of 77 cases were reported through the surveillance scheme in Northern Ireland during 2007. Of these 77 cases; nine were laboratory confirmed as an infection with a mycobacterium other than tuberculosis, and two other cases were diagnosed as having an illness other than tuberculosis. These 11 patients were de-notified but remained recorded in the dataset and were excluded from the main analysis, giving a total of 66 cases of tuberculosis notified in 2007 for Northern Ireland. This represents a rate of 3.75/100,000 population, which is slightly higher than 2006 (3.5/100,000).

The annual notification rate for pulmonary tuberculosis in Northern Ireland during 2007 was similar to 2006 (2.5 / 100,000) at 2.4 cases per 100,000 population (Figure 1). Of the 66 notified cases in 2007, 42 (64%) had pulmonary disease and 24 (36%) had non-pulmonary disease. Fifty-four (82%) of the 66 notified cases were culture confirmed. Fifty-three of the isolates were identified as *M. tuberculosis* and one as *M. bovis*. In addition 12 cases were notified on the basis of clinical or non-culture diagnosis and response to anti-tuberculosis therapy. Of these twelve cases, seven were confirmed by examination of lymph node and one from bone/joint site.

Of the 42 pulmonary tuberculosis cases, twenty-one (50%) were found to be sputum smear positive at the time of notification and with the exception of one case, all were subsequently, confirmed by culture as being *M. tuberculosis*. This is higher than 2005 and 2006 when 39% and 37% respectively, of pulmonary tuberculosis cases notified were found to be sputum smear positive. The proportion of males with pulmonary TB in 2007 was 71% similar to 2006 (72%) Thirty-four (81%) of the 42 pulmonary tuberculosis cases notified during 2007 successfully completed a full course of anti-tuberculosis treatment, of which three were MDR cases. Three patients with pulmonary tuberculosis died, two while on treatment and one was diagnosed post mortem.

Fifteen of the 24 non-pulmonary tuberculosis cases were confirmed by culture (14 *M. tuberculosis* and 1 *M. bovis*). The annual notification rate for non-pulmonary tuberculosis in 2007 remained similar to 2006 at 1.0 case per 100,000 population, with the WHSSB having the highest incidence rate at 2.0 cases per 100,000 population.

Follow-up information (Treatment outcome forms and/or death certificates) were provided for 60 (91%) of the 66 notified cases.

Antimicrobial susceptibility information to date has been received on 55 of the 66 *M. tuberculosis* isolates. Three *M. tuberculosis* isolates were found to be resistant to both isoniazid & rifampicin (MDR) and one other isolate was found resistant to isoniazid only (Figure 2). Antimicrobial susceptibility data was available on the one *M. bovis* isolate, and as expected, was found to be pyrazinamide resistant.

Figure 1: Rates of pulmonary and non-pulmonary tuberculosis per 100,000 population, Northern Ireland by year

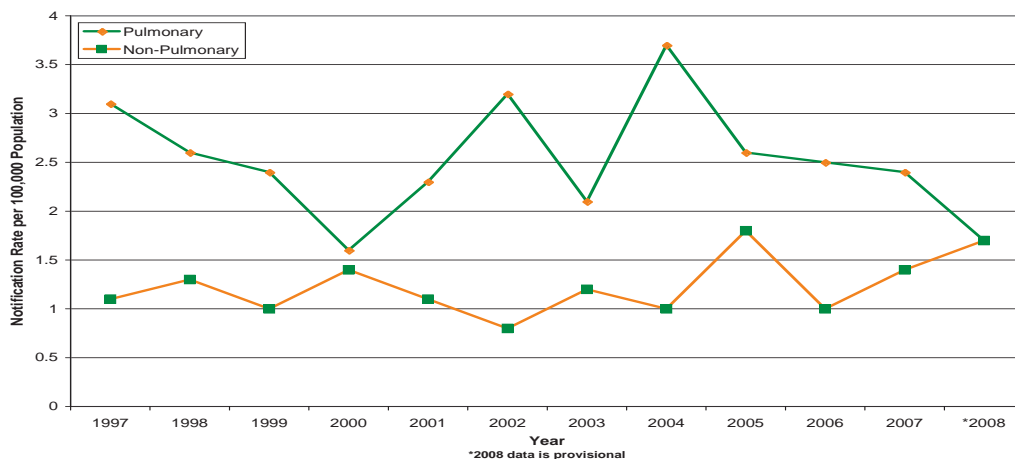
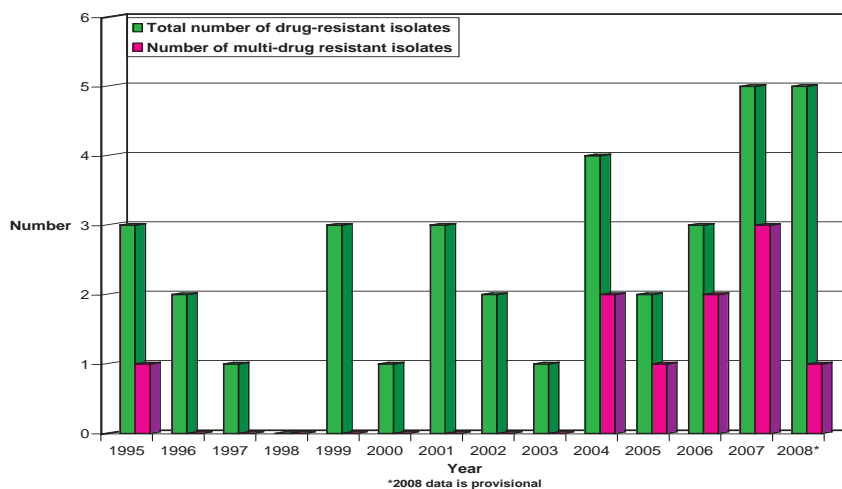


Figure 2: Incidence of drug resistance in isolates of *M. tuberculosis* Northern Ireland by year



2. Provisional data 2008

During 2008 CDSC (NI) received 68 notifications of tuberculosis. Ten cases have been identified as having infections with mycobacteria other than the tuberculosis complex, leaving a total of 58 notified cases of tuberculosis. This corresponds to a notification rate of 3.30 cases per 100,000 population.

Of the 58 notified cases, 29 (50%) have pulmonary disease and 29 (50%) are non-pulmonary. Forty of the 58 notified cases were culture confirmed as *M. tuberculosis* infection and two as *M. bovis* infection.

Seventeen of the 29 pulmonary cases have been culture confirmed of which 16 were *M. tuberculosis* infection (3 were also sputum smear positive). To date, 12 of the 29 non-pulmonary cases have been confirmed by culture (10 *M. tuberculosis* and 2 *M. bovis*).

To date antimicrobial sensitivity testing results are available for 37 of the *M. tuberculosis* isolates. One isolate were found resistant to both isoniazid and rifampicin (multi-drug resistant) and two found resistant to isoniazid alone. The *M. bovis* isolates were resistant to pyrazinamide.

CDSC (NI) wishes to acknowledge the efforts of all involved in the collection of tuberculosis data. The 2006 report is now published and available to read on the CDSC (NI) website.

Mycobacteria: Laboratory reports, weeks 13-20

	Number of Reports received		Cumulative total	
	09/13-16	09/17-20	09/01-20	08/01-20
<i>M. abscessus</i>	0	0	2	1
<i>M. avium-intracellulare</i> group	0	4	11	19
<i>M. bovis</i>	0	0	1	1
<i>M. chelonae</i>	2	1	4	4
<i>M. fortuitum</i>	0	0	0	2
<i>M. gordonae</i>	1	1	6	8
<i>M. kansasii</i>	0	0	1	7
<i>M. marinum</i>	0	0	1	0
<i>M. peregrinum</i>	0	1	1	0
<i>M. sp</i>	0	0	2	3
<i>M. tuberculosis</i>	3	3	19	20
<i>M. xenopi</i>	1	1	2	0
TOTAL	7	11	50	65

Comment:

During Weeks 13-20, 2009 the following were reported;

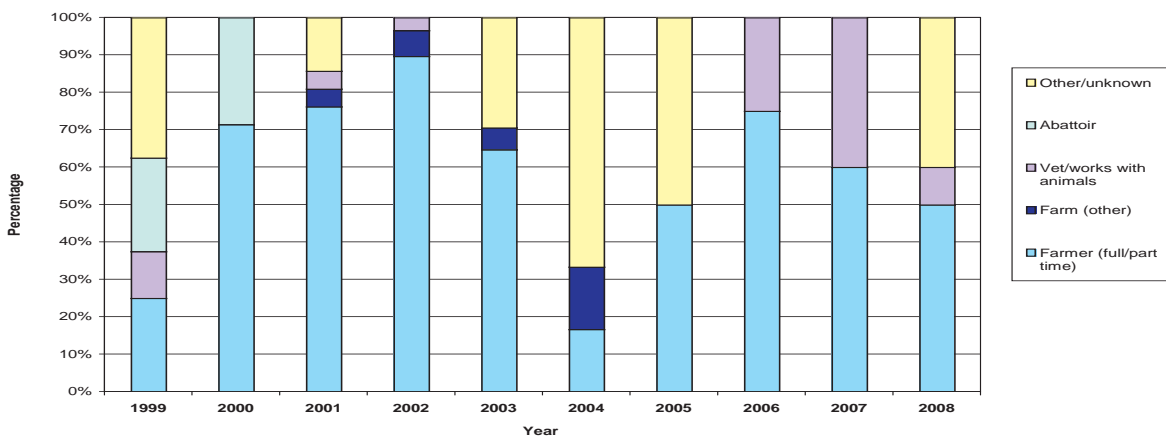
- Four cases of *M. avium intracellulare*. The mean age was 71 years (median 73 years). Three cases were isolated from sputum and one bronchial. The cumulative total for *M. avium intracellulare* from weeks 01 to 20 is 11 cases, a decrease from the same period in 2008 (19 cases).
- Three cases of *M. chelonae* reported. Two were isolated from sputum and one from urine.
- Two cases of *M. gordonae* were isolated from sputum. Age-range 43-63 years.
- Two cases of *M. xenopi* isolated from sputum.
- One case of *M. peregrinum* isolated from sputum.
- Six cases of *M. tuberculosis* were reported during this reporting period. Age-range from 30-81 years. Two cases were isolated from sputum, two from lymph nodes and two bronchial. The cumulative total for *M. tuberculosis* from weeks 01 to 20 is 19 cases, similar to the same period in 2008 (20 cases).

Human Brucellosis in Northern Ireland

During 2008 a total of ten new cases of human brucellosis were reported to CDSC (NI). This represents an increase for the third year in a row with five cases reported in 2007, four cases reported in 2006 and two cases reported in 2005.

Most of the cases reported between 1999 and 2008 are thought to be due to occupational exposure. Farming is still the most likely exposure risk. According to the occupation or exposure risk information available, 70% (85) of cases were linked to farms and another 6% (7) were people who work with animals, for example as vets or animal trainers, and 5% (6) of cases had worked in an abattoir although there have been no reports from this occupation/risk group since 2000.

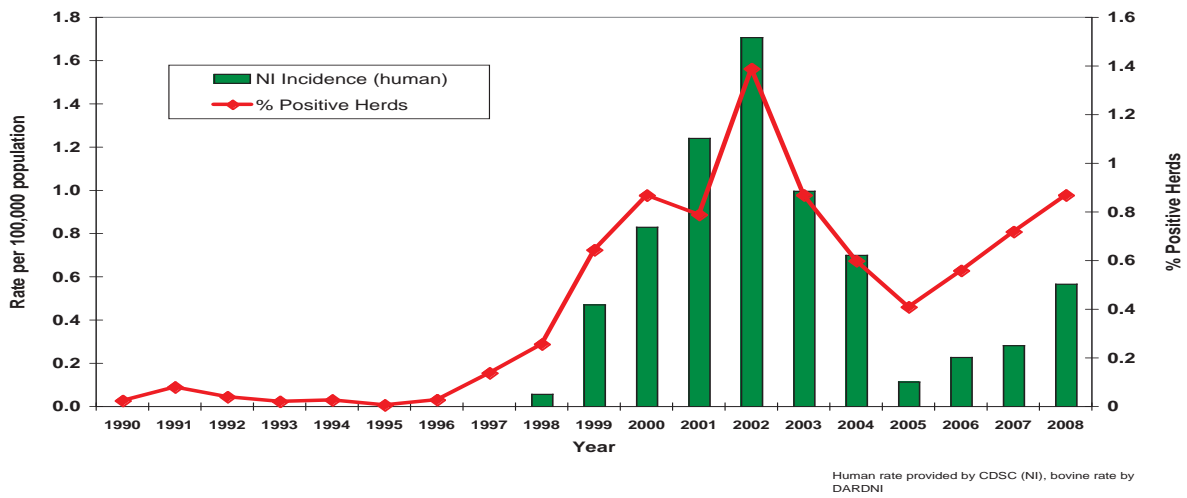
Figure 3: Proportion of cases of Human Brucellosis reported to CDSC (NI) by occupation/risk group, 1999-2008, Northern Ireland



The majority of cases reported to CDSC (NI) since 1999 have been from the Southern Health and Social Services Board area, 64%, followed by the Northern Health and Social Services Board area, 17%, and the Western Health and Social Services Board area, 16%.

The information provided by DARDNI for 2008 shows a rise in the number of seropositive herds from 151 in 2007 to 177 in 2008. A total of 0.87% of herds tested seropositive in 2008, compared with 0.72% in 2007, as show in the graph below.

Figure 4: Rates of Human and Bovine Brucellosis, 1990-2008, Northern Ireland



The rise in human disease echoes the higher percentage of herds testing positive and would indicate there is still a need for vigilance among GPs and people who work on farms, or with animals, in affected areas.

More information and advice on bovine brucellosis can be found in the DARDNI website at <http://www.dardni.gov.uk/index/animal-health/animal-diseases/br.htm>

Healthcare Associated Infections in Northern Ireland: Annual report 2008

The 2008 annual HCAI report based on the MRSA and *C. difficile* mandatory reporting schemes is due to be published during July 2009. The report will be available online at: <http://www.cdscni.org.uk>

Key findings

In 2008, the Northern Ireland rate of *Staphylococcus aureus* bacteraemias (MSSA and MRSA) increased by 3% from 2007. During 2008, 581 patient episodes of *S. aureus* were reported, a rate of 0.33/1,000 occupied bed days. This compared with 565 patient episodes and a rate of 0.32/1,000 occupied bed days in 2007.

208 Meticillin Resistant *S. aureus* (MRSA) patient episodes were reported in 2008, a rate of 0.12/1,000 occupied bed days. This is a slight decrease from 2007 where 229 cases were reported and a rate of 0.13/1,000 occupied bed days.

373 Meticillin Sensitive *S. aureus* (MSSA) patient episodes were reported in 2008, a rate of 0.21/1,000 occupied bed days. This is an increase from 2007 where 336 cases were reported and a rate of 0.19/1,000 occupied bed days.

The number of *C. difficile* isolates reported in hospital inpatients aged 65 years and over was 986, a rate of 1.03/1,000 bed days. This compares to 997 isolates reported in 2007 (rate of 1.03). This slight reduction was not statistically significant as indicated by the SPC charts for Northern Ireland (see quarterly and annual HCAI reports).

Monthly surveillance figures for Creutzfeldt-Jakob Disease

The incidence of Creutzfeldt-Jakob Disease (CJD) is monitored in the UK by the National CJD Surveillance Unit (NCJDSU) based at the Western General Hospital in Edinburgh, Scotland.

The Unit has issued the latest information about the number of known cases of Creutzfeldt-Jakob disease. This includes cases of variant Creutzfeldt-Jakob disease (vCJD) – the form of the disease thought to be linked to BSE.

Further information can be accessed on the NCJDSU website <http://www.cjd.ed.ac.uk>

These figures show the number of **suspect** cases referred to the CJD Surveillance Unit in Edinburgh, and the number of deaths of definite and probable cases in the UK, up to 1 June 2009.

Table 1: Creutzfeldt-Jakob Disease in the UK by Calendar Year

Referrals of Suspect CJD		Deaths of Definite and Probable CJD						
Year	Referrals	Year	Sporadic	Iatrogenic	Familial	GSS	vCJD	Total Deaths
1990	[53]	1990	28	5	0	0	-	33
1991	75	1991	32	1	3	0	-	36
1992	96	1992	45	2	5	1	-	53
1993	75	1993	36	4	5	2	-	47
1994	119	1994	53	1	5	3	-	62
1995	87	1995	35	4	2	3	3	47
1996	133	1996	40	4	2	4	10	60
1997	162	1997	60	6	4	1	10	81
1998	154	1998	63	3	3	2	18	89
1999	170	1999	62	6	2	0	15	85
2000	178	2000	50	1	2	1	28	82
2001	179	2001	58	4	4	2	20	88
2002	163	2002	72	0	4	1	17	94
2003	162	2003	79	5	4	2	18	108
2004	114	2004	50	2	4	2	9	67
2005	124	2005	66	4	8	5	5	88
2006	111	2006	69	1	6	3	5	84
2007	115	2007	63	2	7	1	5	78
2008	146	2008	87	5	2	3	1	98
2009*	52	2009	21	1	1	0	0	23
Total Referrals	2472	Total Deaths	1069	61	73	36	164	1403

*As at 1 June 2009

Summary of vCJD cases

Deaths

Deaths from definite vCJD (confirmed):	115
Deaths from probable vCJD (without neuropathological confirmation):	49
Deaths from probable vCJD (neuropathological confirmation pending):	0
Number of deaths from definite or probable vCJD:	164

Alive

Number of definite/probable vCJD cases still alive:	4
Total number of definite or probable vCJD cases (dead and alive):	168

Foodborne and gastrointestinal tract infections: Laboratory reports, weeks 17-20

	Number of Reports received		Cumulative total	
	09/17-20	08/17-20	09/01-20	08/01-20
<i>Campylobacter</i>	92	78	240	236
<i>C. difficile</i> Toxin	69	154	493	689
<i>C. perfringens</i>	1	4	8	15
<i>E. coli</i> O 157	1	3	1	26
<i>Salmonella</i> total	6	10	29	37
<i>S. enteritidis</i> (PT 4)	2 (0)	2 (2)	8 (2)	10 (2)
<i>S. typhimurium</i> (DT 104)	1 (0)	2 (0)	5 (0)	9 (2)
<i>Salmonella</i> other	3	5	16	18
<i>Shigella</i>	2	0	7	2
<i>Cryptosporidium</i>	23	17	46	50
<i>Giardia</i>	0	0	3	1
Adenovirus (faeces)	16	19	65	136
Enterovirus (faeces)	0	3	4	15
Rotavirus	92	163	504	394
Norovirus	14	28	291	270

Salmonella (other than *enteritidis* or *typhimurium*):

<i>S. muenchen</i>	1
<i>S. newport</i>	1
<i>S. spp</i>	1

Comment:

There were no reports associated with foreign travel.

Contributing Laboratories

Altnagelvin	Antrim
Belfast City	Causeway
Craigavon	Regional Virus
Royal Victoria	Tyrone County
Ulster	

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