

**PUBLIC INQUIRY INTO THE OUTBREAK OF *CLOSTRIDIUM DIFFICILE* IN
NORTHERN TRUST HOSPITALS**

WITNESS STATEMENT OF DR LORRAINE DOHERTY

I, Lorraine Doherty, aged over eighteen years, pursuant to a written request dated 28 September 2010 from the solicitor to the Public Inquiry into the Outbreak of *Clostridium difficile*, make the following statement:

1. I am the Assistant Director of Public Health (Health Protection) at the Public Health Agency, Northern Ireland.
2. The *Clostridium difficile* Inquiry has asked that I provide a written statement of evidence to address the following:

‘the manner in which the Public Health Agency monitors trends/reviews cases in regard to infectious disease in Northern Ireland’.

(i) Monitoring Trends of Infectious Disease by the Public Health Agency

1. The Communicable Disease Surveillance Centre (Northern Ireland) (CDSC) was established by the Department of Health, Social Services and Public Safety (DHSSPS) in 1999 primarily to monitor the changes in incidence, prevalence and patterns of infectious disease. In 2001 the DHSSPS established the Healthcare Associated Infection Surveillance Centre (HISC) to assist acute hospitals in Northern Ireland to undertake healthcare associated infection surveillance. These two legacy surveillance units have now been integrated into the regional Health Protection Service in the Public Health Agency (PHA).
2. Since April 2009, when the PHA was established by the DHSSPS, its Health Protection Service has delivered and maintained a range of surveillance systems. Surveillance has been defined by the US Centers for Disease Control and Prevention as “the ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice closely integrated with the timely dissemination of these data to those who need to know”.
3. Surveillance systems have been designed to regularly monitor the occurrence of a variety of infectious diseases across Northern Ireland and to facilitate early detection of any new outbreak or epidemic. Specialist surveillance and information staff monitor and scrutinise the surveillance systems and identify unusual disease patterns or occurrence. These are reported to Health and Social Care (HSC) colleagues and to the DHSSPS for appropriate further action.
4. In Northern Ireland surveillance of communicable disease includes a range of inter related activities which together provide a comprehensive overview of recent infections. This paper describes the main elements of the surveillance programmes.

5. All the surveillance systems in Northern Ireland are kept under regular review and revised as needed to ensure that: i) they meet the needs of Northern Ireland and; ii) they are consistent with what is required for national surveillance to the Health Protection Agency (HPA) and internationally to the World Health Organisation (WHO) and the European Centre for Disease Prevention and Control (ECDC). This continual review includes making best use of IT systems for data collection and reporting.

6. Surveillance and outbreak data are published in a monthly bulletin and reports which are publically available on the PHA and legacy organisation websites (www.publichealth.hscni.net; www.cdscni.org.uk).

7. In Northern Ireland, surveillance of infectious disease exists for:
 - a. individual diseases e.g. food poisoning
 - b. individual organisms e.g. salmonella
 - c. syndromes e.g. influenza and influenza like illness
 - d. antimicrobial resistance e.g. PVL positive *S. aureus* and glycopeptide resistant enterococci (GRE)
 - e. device associated infection e.g. ventilator associated pneumonia (VAP)
 - f. outbreaks.

8. The data on the above originates from:
 - a. Notifications Of Infectious Diseases (NOIDs)
 - b. Hospital clinical laboratory reports
 - c. Genito-Urinary Medicine (GUM) clinic statutory returns
 - d. Sentinel GP practices
 - e. Enhanced surveillance programmes e.g. TB, syphilis, *E coli* O157
 - f. Mandatory surveillance programmes e.g. MRSA, *C. difficile*
 - g. Death certification

- h. Or a combination of the above (see section h 'Other Surveillance Mechanisms')

These categories will be used to guide this response.

a. Notifications of Infectious Diseases (NOIDs)

- 9. There are 33 notifiable diseases in Northern Ireland (Appendix 1, Table 1). These are similar but not identical to notifiable diseases in other parts of the UK. The notification system has been in existence for over a hundred years and has provided valuable data on historic trends.
- 10. Clinicians are required under the Public Health Act to inform (notify) the Director of Public Health of a patient whom they suspect has a notifiable disease. This is usually through the completion of a short form though urgent cases can be notified by telephone. Laboratory confirmation is not required for the purposes of notification. These notifications are received by the Public Health Agency Health Protection Duty Room where they are individually assessed and relevant action instituted (for further details see section (ii) 'Case Management of Infectious Diseases/Review of Cases by the Health Protection Service of the Public Health Agency').
- 11. Notifications received each week are collated by surveillance staff and compared with recent weeks and for the same period in previous years. This is tabulated and uploaded to the legacy CDSC website (<http://www.cdscni.org.uk/>).

b. Hospital Clinical Laboratory Reports

- 12. Each hospital microbiology laboratory alerts the PHA Duty Room on a daily basis of organisms of public health interest. This includes organisms associated with food poisoning, such as, salmonella and

campylobacter and with infections, for example, tuberculosis and meningitis. The Duty Room will then instigate urgent public health action.

13. The laboratories also report, using software developed by the Health Protection Agency (HPA) in England and Wales, a more comprehensive list of organisms and their antimicrobial sensitivity to the PHA surveillance staff. Approximately 14-15,000 organisms are reported annually to the PHA and this forms the bedrock of the communicable disease surveillance system. Northern Ireland microbiology laboratories follow the HPA reporting guidelines (http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947381307) and this ensures that a common set of organisms and a standardised dataset is collated to enable comparison of Northern Ireland data with England and Wales. These reports are scrutinised each week and exceedances brought to the attention of the appropriate Health Protection functional team. Northern Ireland laboratory data is also sent electronically twice each week to the HPA Centre for Infections for incorporation in the national database where it undergoes further analysis. Under the Memorandum of Understanding between the PHA and the HPA a statistical alert programme is run weekly by the HPA to alert the PHA to unusual increases in the number of reports of a given organism during the reporting period. This process ensures there is a robust process for reviewing the laboratory data.
14. Using sensitivity data from laboratory reports monitoring of anti-microbial resistance has been established for Panton-Valentine Leukocidin (PVL) positive *S. aureus*, Extended Spectrum Beta Lactamases (ESBL) and Glyco-peptide Resistant Enterococci (GRE). PVL reporting arrangements were agreed with the Health Protection Agency's Staphylococcus Reference Laboratory in July 2009.

15. The PHA is notified by the Regional Virus Laboratory by email of all new detections of acute Hepatitis B to allow appropriate and timely public health action.
16. Hepatitis B and C laboratory reports are reported quarterly in the PHA *Transmit* bulletin.
17. Surveillance staff utilise laboratory data in the preparation of monthly, quarterly and annual epidemiological reports and responding to requests for trends from other organisations, local and GB, such as DHSSPS, the Food Standards Agency and the Department of the Environment, Food and Rural Affairs.
18. The PHA publishes a monthly health protection bulletin *Transmit* (<http://www.publichealth.hscni.net/publications>). This is primarily aimed at health care and environmental health professionals and includes the latest Northern Ireland communicable disease statistics and commentary.

c. GenitoUrinary Medicine Returns

19. The surveillance arrangements for diagnosed HIV/AIDS infection in Northern Ireland are the same as for England and Wales and are based on the confidential reporting of HIV infected individuals by clinicians to the Health Protection Agency's Centre for Infections in London. There are three main methods:
 - a. Data relating to individuals whose first UK diagnosis was made in Northern Ireland
 - b. Data relating to individuals who accessed statutory HIV services in England, Wales or Northern Ireland and who were resident in Northern Ireland, as defined when last seen for care in 2009: the Survey of Prevalent HIV Infected cases (SOPHID)
 - c. Laboratory reporting of CD4 cell counts on new diagnoses

20. In addition, Northern Ireland has now recently begun to participate in the Recent Infection Testing Algorithm (RITA) arrangements to provide a measure of diagnoses within six months of infection.
21. GUM clinicians also copy the new diagnoses surveillance form to the PHA, to provide a timely means of monitoring new diagnoses in Northern Ireland and to identify the main routes of transmission.
22. The HPA publish Northern Ireland-specific epidemiological tables every six months and provide a disaggregate dataset at the same time to the PHA to allow for further regional analysis to be done. The HPA also publishes annual SOPHID tables for Northern Ireland. The PHA collates information from the various HPA publications and regional analyses and publishes these annually in the HIV/STI surveillance report, timed to coincide with World AIDS Day.
23. There are three main surveillance arrangements for the monitoring of sexually transmitted infections:
 - a. Aggregated data describing STI diagnoses and episodes of care made in GUM clinics in Northern Ireland are provided by the statutory KC60 return made each quarter from each GUM clinic. Returns are made six weeks after the quarter end. The information from each clinic is validated, then collated and analysed. An upload is made to the database for England, Wales and Northern Ireland at regular intervals. Quarterly updated summary statistics are presented at www.cdscni.org.uk, and published with HIV statistics in the annual HIV/STI surveillance report.
 - b. Laboratory detections of chlamydia are reported electronically using COSURV.
 - c. Enhanced surveillance arrangements for infectious syphilis in Northern Ireland have been in place since an outbreak was first recognised in September 2001. Based on anonymised, confidential reporting by GUM clinicians to the PHA, a range of

demographic, clinical and risk factor data are collected on cases of primary, secondary and early latent stage syphilis. An analysis is published each year in the PHA annual HIV/STI surveillance report.

d. Sentinel GP Practices

24. A network of 37 GP practices in Northern Ireland report on a weekly basis, throughout the year, to the PHA the number of patients consulting with influenza or influenza like symptoms. Most of these practices also swab the patients, on public health grounds, to ascertain the presence of respiratory viruses. This data combined with data from the GP Out of Hours centres, the Regional Virus Laboratory, school absences, outbreaks and death certification is then collated and published in a regular bulletin available from the PHA website. When there is little influenza activity it is published every two weeks and when influenza virus is circulating it is published weekly.

e. Enhanced Surveillance Programmes

25. Enhanced surveillance programmes have been established for selected infections in order to capture additional epidemiological and risk factor information that would not be available from the notification form or the laboratory. Not only does this provide information on trends but it can provide useful information on the effects of policy, facilitate targeted public health action, including public and professional awareness raising, and assess the impact of control measures. Examples include: *E coli* O157 where information is collected on exposure to farm animals, open farms as well as foods consumed; syphilis and information on sexual history; tuberculosis and information on country of birth and previous BCG immunisation. An important part of each enhanced surveillance programme is the production of regular epidemiological bulletins to inform policy makers, commissioners and Trusts. For example: an annual epidemiological report on *E. coli* O157 is discussed at the Regional Zoonoses Group chaired by the Chief

Medical Officer and a meningococcal report is produced on infection and history of meningococcal vaccination . These reports are also publicly available from the PHA and legacy websites.

26. Surveillance and response arrangements for meningococcal disease follow national HPA guidelines and protocols.
27. Not all organisms or infections can be under enhanced surveillance and a regular risk assessment is undertaken to ensure the benefits of the enhanced surveillance programme outweigh the resources required to sustain the programme.

f. Mandatory Surveillance Programmes

28. Mandatory laboratory reporting of Methicillin-resistant *Staphylococcus aureus* (MRSA) and Methicillin-sensitive *Staphylococcus aureus* (MSSA) commenced in April 2001 using definitions consistent with those used in England. **Mandatory surveillance for *Clostridium difficile* began on 1 January 2005 based on laboratory reports of *Clostridium difficile* toxin detected in hospitalised patients over 65 years.** The target age group for *Clostridium difficile* surveillance was extended in April 2009 to include all patients over the age of 2 years old (for detailed information see INQ REF: EXPERT REF 02-1-P1, points 28, 31-37; Appendix 2 Front sheet).
29. Data from mandatory *C. difficile* and MRSA/MSSA surveillance are validated and published quarterly, six weeks after the quarter to which they relate. The reports are made available on the legacy CDSC website (www.cdscni.org.uk).
30. Other recent developments in Healthcare Associated Infections (HCAI) surveillance include the introduction of the regional Health Care Associated Infection web based surveillance system (April 2009), adapted from the HPA for use within Northern Ireland, for more timely

reporting of MRSA, MSSA and *C. difficile* infections. Prior to 2009, *C. difficile* ribotyping was carried out on a sample of all *C. difficile* episodes. Since April 2009, we now routinely ribotype all *Clostridium difficile* episodes for completeness (in other Administrations up to 10% of *Clostridium difficile* episodes may be typed; for detailed information see INQ REF: EXPERT REF 02-1-P1, points 35-36; Appendix 2 Front sheet). The PHA have also introduced a new monthly Health Care Associated Infection monitoring report which is issued to Trusts (15-18 days after month end); and recently introduced enhanced surveillance of *C. difficile* cases in the community (see point 48 for further detail).

31. For *C. difficile* surveillance community associated episodes are defined by the patient source at the time the specimen was taken. This is not strictly 'community acquired' as it is not possible to differentiate between patients who have had a recent healthcare interaction, for example, those that have recently been discharged from hospital. Indeed, there is much debate surrounding the definition of community acquired *C. difficile* and suggestions are quite complex (see *Clostridium difficile* Infection: How to deal with the problem, p86: http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1232006607827) Therefore, the patient source can be used as a proxy to distinguish between those episodes that occur in a hospital setting and those that occur in the community. With this in mind, 'community' includes the following:

- a. GP/Primary Care
- b. A&E and Outpatients
- c. Other (to include Psychiatric and Learning Disability Hospitals/Units, hospice, nursing homes, other community facilities)

32. The legacy surveillance unit HISC (integrated into the Health Protection Service in the PHA, April 2009) was established to develop priority surveillance initiatives in the area of HCAI and to assist acute

Trusts in Northern Ireland in monitoring HCAI by facilitating data collection, handling, analysis and feedback.

33. The initial focus was on surveillance of surgical site infection in orthopaedic in-patients. The unit provides Trusts with quarterly and annual surveillance reports of validated orthopaedic procedures. Quarterly reports are produced 4 months after the end of each quarter to enable sufficient post procedure follow-up.
34. The Pan Celtic collaboration is a major UK initiative involving hospitals from Northern Ireland, Scotland and Wales. The Public Health Agency is responsible for the collation of data on four mandatory orthopaedic procedures on behalf of the surveillance centres in Wales, Scotland and Northern Ireland and for the production of a Pan Celtic collaborative annual report. The first Pan Celtic Collaborative report covered orthopaedic procedures performed between 2001 and 2003. The Public Health Agency has produced reports for subsequent years. The fifth report presents the results of the analysis of data including procedures carried out in 2008. The report incorporates data collected by clinical teams in Northern Ireland, Scotland and Wales, utilising standard internationally agreed definitions.
35. Orthopaedic data is submitted to ECDC on behalf of the Pan Celtic countries. ECDC is an international network aimed at the collection, analysis and dissemination of valid data on the risks of nosocomial infections in European hospitals.
36. In the Minister's Priorities for Action 2007-08 the PHA were tasked with assisting acute Trusts with the introduction of caesarean section surgical site infection (SSI) surveillance by the end of 2007. By April 2008, all Trusts had commenced caesarean section SSI surveillance. Results are fed back quarterly to all participants.

37. Health Protection Scotland is responsible for the collation of data on caesarean sections on behalf of the surveillance centres in Wales, Scotland and Northern Ireland and for the production of a Pan Celtic collaborative annual report. The first report covering caesarean section procedures from 2008 is anticipated in November 2010.
38. Since 2009, the PHA has had an enhanced role in the surveillance of HCAs. The Agency commenced mandatory surgical site infection surveillance for neurosurgery and cardiac surgery procedures in April 2010. A regional mandatory surveillance programme for device-associated HCAI surveillance in adult intensive care units has been in operation since June 2010.
39. The HALT project, organised by the European Centre for Disease Prevention and Control, is a point prevalence survey of long-term care facilities (LTCFs) in European countries including Northern Ireland, which is taking place in 2010. The Public Health Agency coordinated the survey along with staff from each participating nursing home in September 2010. The survey looked at four areas: healthcare associated infection, antibiotic use, antibiotic resistance and resources and practices. The PHA provided training, technical support, survey materials and software. Participating LTCFs were able to access a summary report with preliminary results on completion of the survey. The PHA will produce a preliminary Northern Ireland report by the end of December 2010. The Northern Ireland data will be forwarded for inclusion into the European database and a study report, including aggregated data of all participating European LTCFs, will be prepared by the Institute of Public Health (Brussels, Belgium) in 2011. The PHA will send this report to all participating LTCFs.
40. In addition to these ongoing surveillance programmes, Northern Ireland has participated in three national prevalence surveys of the overall levels of HCAI. The most recent Prevalence Survey of Healthcare Associated Infection in Acute Hospitals in the United

Kingdom and Ireland (excluding Scotland) was published in October 2006. The full survey can be found at the Hospital Infection Society website. (www.his.org.uk). The Agency will complete a repeat of the 2006 HCAI Prevalence Survey in 2011.

g. Death Certification

41. Death certification details of those dying from an infectious disease are forwarded to the PHA surveillance staff at regular intervals and these are linked, where appropriate, to laboratory reports and the enhanced surveillance programmes.

h. Other Surveillance Mechanisms

42. An antenatal infection screening programme has been in place in Northern Ireland since 2004. Statistics reflect the number of pregnant women who have booked in that quarter and who have been offered and received testing for HIV, Hepatitis B and syphilis infections, and rubella immunity. The returns also provide results in terms of the number of positive detections for each disease and the numbers of tests showing non-immunity to rubella. Positive (and rubella non-immune) results are entered onto a spreadsheet for ease of monitoring. The results for 2004-2008 have been published recently by the DHSSPS in a report and an update is planned using 2009 data.

43. The surveillance of vaccine preventable diseases calls for monitoring of incident cases of disease and of vaccination uptake in the population.

44. The majority of diseases preventable by the childhood vaccination programme are notifiable on the basis of clinical opinion in Northern Ireland under the Public Health Act. Details of notifications made to the PHA Duty Room are entered onto HP Zone and District COSURV databases and public health action taken, as appropriate. Each week,

a line listing of cases of measles, mumps, rubella and pertussis notifications is generated and monitored by the vaccine preventable disease team.

45. Positive laboratory reports are reported via routine electronic reporting and, for measles, reported directly to the Duty Room. Positive detections for measles, pertussis, invasive pneumococcal and Hib disease are followed up with an enhanced surveillance form.

46. Confirmation of diagnosis is sought for notifications of cases of measles and rubella using either oral swabs sent directly to the Regional Virology Service or by oral fluid antibody tests sent to the HPA.

47. Northern Ireland participates in the national COVER (Coverage Of Vaccines Evaluated Rapidly) programme run by the immunisation division of HPA. Each quarter, Trusts return uptake figures for the childhood vaccination programme to HPA allowing the percentage uptake for vaccines at age 12 months, 24 months and five years to be calculated. Results are published quarterly by the HPA, by the PHA in its *Transmit* bulletin and on the PHA website.

48. Northern Ireland participates in the national CJD surveillance and public health response arrangements. Cases are reported in confidence by the responsible clinician to the national surveillance unit and to the PHA and subsequent actions taken according to national protocol. Each quarter the national surveillance unit sends the PHA a report of variant CJD cases by UK geographic region of last residence.

National/International Collaboration

49. Reference has been made earlier to Northern Ireland surveillance data being regularly forwarded to the HPA and ECDC for inclusion in national and international surveillance. In addition, there is close

informal liaison between the PHA and the Health Protection Surveillance Centre in Dublin ensuring both jurisdictions are aware of trends and communicable disease alerts in either jurisdiction.

50. As part of this international collaboration the PHA is a host training institute for the ECDC EPIET training programme. Part of this programme is devoted to establishing and evaluating surveillance programmes.

(ii) Case Management of Infectious Diseases/Review of Cases by the Health Protection Service of the Public Health Agency

51. Prior to April 2009 all immediate surveillance and follow up of cases, clusters and outbreaks was carried out by the Consultant in Communicable Disease Control (CCDC) and support staff within the local departments of public health medicine at Health and Social Services Boards. All this activity was transferred to the newly created Public Health Agency on 1st April 2009.

52. The creation of a regional Health Protection Service in the Agency necessitated new working arrangements to deliver the acute response elements of service. In response the agency established a Health Protection Duty Room to deal with the ongoing acute requirements of health protection i.e. the cases and enquiries which needed an urgent response and action. The role of the duty room is to:

- i. Co-ordinate the day to day responses
- ii. Act as a focus for data gathering and processing for immediate action
- iii. Provide a contact point for relevant telephone enquiries
- iv. Delegate responsibility for further action to the most appropriate members of staff
- v. Initiate the unified response to incidents
- vi. Maintain a record of data gathered, information processed and initial action taken

- vii. Provide a focus for training in relation to acute health protection issues

53. The Duty Room is the focus for data and information collection from:

- a. All Microbiological Laboratories
- b. Notification of notifiable diseases from Primary Care and hospitals
- c. Environmental Health Departments
- d. Northern Ireland Water Service
- e. Direct contact with a range of healthcare professionals
- f. Private sector care and nursing homes
- g. Occasional contact with the public
- h. Notices from national bodies e.g. FSA and HPA

All the data and information is processed and risk assessed by duty medical and nursing staff who also lead further action and monitoring of the subsequent outcome. The duty room has established networks to facilitate the dissemination of information and subsequent monitoring of activity. There are dedicated phone numbers, faxes and an e-mail address.

Management of Routine Cases

54. Information from a range of sources is initially processed by administrative support staff within the duty room and accessed by the duty officer of the day. Many of the gastrointestinal diseases are followed up by the EHO staff on behalf of the Agency. Information is forwarded by the EHO to the duty room by means of a series of standardised questionnaires. All the information on Notifiable Infectious Diseases (NOIDs) is logged on to two nationally available software packages i.e. CoSURV and HP Zone. The Duty Room has been supported by HP Zone since August 2010 and it is used for the management of all NOIDs (except chickenpox).

HP Zone

55. HP Zone is a national software programme to support staff in key business processes related to the Health Protection Service of the Agency. This ranges from the handling of routine enquiries, through case management and contact tracing, right up to the management of a large outbreak. It has been designed to run across multiple sites thus maximising the benefits of data and knowledge sharing between individuals and units. By ensuring the capture of high quality data, HP Zone enables staff to access intelligence in real-time providing opportunities to recognise potential outbreaks and observe trends more quickly than has hitherto been possible. The system also provides a precise event history of individual cases and outbreaks, which can be used for audit purposes, to allow for an evaluation of performance and possibly identify where improvement can be made.

Dealing With Single Urgent Cases

56. There are a number of organisms e.g. *E coli* where there is a need for urgent investigation and action i.e. assessment and exclusion of cases and contacts if they are in high risk groups. Response to these cases must be immediate and can require prompt liaison between the local environmental health department and the duty room staff. This will ensure that early risk assessment can be undertaken therefore reducing the ongoing public health risk.

Community Associated *Clostridium difficile* Management

57. From April 2010, the regional HCAI web based surveillance system was further developed to facilitate the enhanced surveillance of *Clostridium difficile* occurring in and/or associated with community healthcare setting or services. For the purpose of data entry of community associated *C. difficile*, the Health Protection Duty room is responsible for the entry of *C. difficile* episodes from primary care and

residential and nursing homes (see point 31 for a full definition of community. Surveillance of *C. difficile* is undertaken by the health protection service within the Public Health Agency (see Points 28 – 31). Data and information on faecal testing is forwarded from the labs to the Health Protection Duty room where it is processed by the duty officer of the day (doctor or nurse). The duty officer or infection prevention and control nurse (IPCN) will make contact with the appropriate professional within primary care or the nursing home. During the initial consultation a risk assessment is carried out, the surveillance forms are completed and control of infection advice is given.

Nursing Homes

58. There is a requirement for staff within a nursing home to inform the local registration authority about any serious incidents related to infectious diseases, including outbreaks. Contact is also made with the duty room where the duty officer will carry out a risk assessment and give immediate advice on infection control. If needed, a visit will be arranged with a local IPCN. Each nursing home is required to forward an e-mail on the outbreak on a daily basis and to complete a summary form at the end of the outbreak. The duty room staff will monitor the progress of the outbreak on a daily basis and will take action as appropriate. All outbreaks are recorded on a local database.

On-call Service

59. A two tier out of hours service is provided by Specialty Registrars (StRs) in Public Health supported by Consultants in Health Protection. A rota of consultants in public health medicine provides a resilient third tier. A Director of Public Health is always available out of hours. A handover summary is provided at 5.00pm on a daily basis with more extensive information at the weekends. The StRs inform the duty room the next morning about any cases or events. Contact can be made

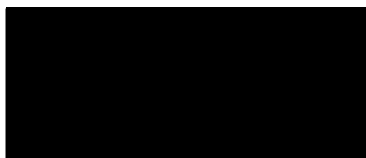
with the EHO staff out of hours as required in order to investigate serious gastrointestinal illness.

Summary

I believe this paper provides the evidence that I have been asked to supply on 'the manner in which the Public Health Agency monitors trends/reviews cases in regard to infectious disease in Northern Ireland'.

I confirm that the contents of this statement are true.

Signed:



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14 October 2010

Appendix 1

Table 1 Notifiable Infectious Diseases

Acute encephalitis/meningitis: Bacterial	Mumps
Acute encephalitis/meningitis: Viral	Paratyphoid fever
Anthrax	Plague
Chickenpox	Poliomyelitis (acute)
Cholera	Rabies
Diphtheria	Relapsing fever
Dysentery	Rubella
Food poisoning	Scarlet fever
Gastroenteritis (persons <2 years of age only)	Smallpox
Hepatitis A	Tetanus
Hepatitis B	Tuberculosis (Pulmonary and non pulmonary)
Hepatitis unspecified: viral	Typhoid fever
Legionnaires' disease	Typhus
Leptospirosis	Viral haemorrhagic fevers
Malaria	Whooping cough
Measles	Yellow fever
Meningococcal Septicaemia	