

The background of the entire page is a green-tinted image of a laboratory setting. In the upper right, a petri dish is shown with several circular bacterial colonies of varying sizes. In the lower left, a microscope is visible, with its eyepiece and objective lenses clearly defined. The overall aesthetic is scientific and professional.

Five Nations Health Protection Conference

Tuesday 29 - Wednesday 30
April 2008

Session Chairs

Dr John Cowden

Consultant Epidemiologist
Health Protection Scotland, Glasgow

Dr Charles Saunders

Consultant in Public Health Medicine
Fife NHS Board, Leven

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We would like to acknowledge the generous sponsorship received from our sponsors who have contributed to the administration costs of this conference.

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Aims and Objectives

The aim of the Conference is to provide a focus for Continuing Professional Development for Consultants in Communicable Disease Control, Consultants and Specialists in Public Health Medicine and their colleagues in the epidemiology, and control of infectious, non infectious diseases and environmental hazards.

The objectives are:

- 1 To refresh participants' knowledge of the recognition, investigation and control of important infections and other environmental hazards.
- 2 To inform participants about significant new and emerging problems in infectious disease and advances in methods of their investigation and control.
- 3 To stimulate discussion of the practical problems that may confront those responsible for carrying out investigations and implementing control procedures.
- 4 To foster the maintenance and development of professional networks among those working in control of infection and environmental hazards.
- 5 To contribute to the development of policies and standards.
- 6 To provide a focus for health protection issues across the Five Nations.



CPD

The Faculty of Public Health no longer accredits meetings for CPD purposes. Individuals should assess the content of external meetings in relation to their own personal development plan (PDP) and make a judgement about its value. Having attended a meeting, if it provides good quality learning, they should write a reflective note and claim CPD credits.

Five Nations Health Protection Conference

Tuesday, 29 April - Wednesday, 30 April 2008

Sheraton Hotel, Fota Island, Cork, Ireland

Tuesday, 29 April 2008

| | | |
|-------|--|--|
| 09.00 | Registration Desk Opens Coffee available | |
| 10.00 | Welcome and Introduction | Dr Jim Kiely, Chief Medical Officer, Department of Health & Children, Ireland |
| 10.15 | Keynote Address Epidemic intelligence in the 21st century: finding the right balance between timeliness and specificity | Dr Denis Coulombier, Head of Unit for Preparedness and Response, ECDC |

SESSION I

| | | |
|----------------------|--|-------------------|
| 11.00 - 12.30 | Making Surveillance Work: What's the Best Way to Count What Counts? Session Chair: Dr John Cowden | |
| 11.00 | Development of a web-based time series graphing and tabulation programme for surveillance of microbiology laboratory reports at regional level | Mr Iain Roddick |
| 11.15 | A good example: the national drug-related deaths index | Dr Suzi Lyons |
| 11.30 | Oh no! Not another data request? Automated collection of <i>C. difficile</i> data | Mr Mark Thomas |
| 11.45 | Evaluation of a pilot enhanced invasive pneumococcal disease (IPD) surveillance system by HPA North East | Dr Deborah Wilson |
| 12.00 | How record linkage can add value to surveillance data: uses of probabilistic record linkage | Dr Andrew Grant |
| 12.15 | Collection of Welsh ICU line infection data in collaboration with patient quality improvement programmes | Dr Wendy Harrison |

12.30 - 13.15 Lunch

13.15 - 13.45 Attended poster viewing session

SESSION II

13.45 - 15.00

Environmental Issues: New Challenges for Health Protection

Session Chair: **Dr Charles Saunders**

| | | |
|-------|--|------------------------|
| 13.45 | Assessing the public health impact of the June 2007 floods in Doncaster | Dr Shantini Paranjothy |
| 14.00 | Public health response to contaminated land: developing a framework to explain who is responsible for doing what | Dr Kirsty Foster |
| 14.15 | Impact of climate change on future incidence of selected food-borne diseases | Dr Elizabeth Cullen |
| 14.30 | Surveillance of mains water-associated communicable disease incidents: is earlier detection possible through mapping of cases to water supply zones? | Dr Daniel Thomas |
| 14.45 | To boil or not to boil: the value of boil water notices | Dr Rachel Chalmers |

15.00 - 15.30

Tea

SESSION III

15.30 - 17.00

Health Protection in Vulnerable People

Session Chair: **Dr Paul McKeown**

| | | |
|-------|--|--------------------------------------|
| 15.30 | Improving sexual health and blood borne virus services in prisons in the South West of England | Dr Ike Anya |
| 15.45 | Blood borne viruses among prisoners: out of sight, out of mind? | Mr Donald Read and Ms Fiona Reynolds |
| 16.00 | An outbreak of measles after a funeral among Irish travellers, England, March to June 2007 | Dr Sandra Cohuet |
| 16.15 | Managing tuberculosis in disadvantaged communities | Dr Caron Walker |
| 16.30 | Improving infection control in long stay care homes | Mrs Sarah Brill |
| 16.45 | Cause specific mortality and survival analysis in sex workers attending a drop-in service | Dr Cathy Johnman |

17.00 - 18.00

Posters available for viewing

Public Health Medicine Environmental Group

Annual General Meeting

18.30 - 19.30

Pre-dinner Drinks and Quiz

Quiz Organisers: Dr Lorraine Lighton / Dr Joyshri Sarangi

Quiz Master: Dr John Cowden

19.45 for 20.00

Conference Dinner

Guest Speaker: Mr Martin Higgins, Chief Executive, **safefood**

Wednesday, 30 April 2008

08.00 - 09.00 Posters available for viewing

SESSION IV

09.00 - 10.30

Outbreaks and Incidents: Evidence or Intuition?

Session Chair: Dr Joyshri Sarangi

| | | |
|-------|--|------------------------|
| 09.00 | Communicating complex results: balancing risk to individual and public health with anxiety about the wider impact of results | Dr Kirsty Foster |
| 09.15 | Challenges in investigating outbreaks presenting as a regional excess of cases of a particular type of <i>Salmonella</i> infection: an example of <i>Salmonella</i> Typhimurium U313 | Dr Helen Park |
| 09.30 | A large tuberculosis outbreak involving two crèches | Dr Margaret O'Sullivan |
| 09.45 | Review of an outbreak investigation: the case for controlling the use of case-control | Dr Helen Davison |
| 10.00 | H5N1 avian influenza in Suffolk: do we learn from our experiences? | Miss Gillian Brown |
| 10.15 | Unprotected sex and the city: the importance of intuition in initiating investigation of an HIV outbreak in Cardiff allowing mapping of wide area sexual networks | Ms Josie Smith |

10.30 - 11.00 Coffee

SESSION V

11.00 - 12.30

Late Breakers and Hot Topics

Session Chair: Dr Dilys Morgan

| | | |
|-------|---|--------------------|
| 11.00 | Presentation for Best Poster | |
| 11.15 | Extensive transmission of <i>Mycobacterium tuberculosis</i> from a 9-year old child with sputum smear-negative pulmonary tuberculosis: how we managed the media | Dr Marian McEvoy |
| 11.30 | Lyme borreliosis in the 5 nations: epidemiology, management, prevention, misdiagnosis | Dr Sue O'Connell |
| 11.45 | Capability and capacity at UK ports: how will the International Health Regulations core capacity standards affect us? | Dr Nicol Black |
| 12.00 | International Health Regulations: the Health Protection Agency experience in implementation | Dr Jane Jones |
| 12.15 | PVL <i>Staphylococcus aureus</i> in Olympic wrestlers | Mrs Diane Fiefield |

12.30 - 13.30 End of Conference - Lunch



Notes

Presentation Abstracts

Tuesday 29 April 2008

SESSION I

Making Surveillance Work: What is the Best Way to Count What Counts?

Development of a web-based time series graphing and tabulation programme for surveillance of microbiology laboratory reports at regional level

I Roddick¹, MH Reacher¹, Aparimana², JB Day²

¹ East of England Regional Epidemiology Unit, Institute of Public Health, Robinson Way, Cambridge

² Camart, Barnwell House, Barnwell Drive, Cambridge

Aims

To develop an easily-used web-based time series graphing and tabulation program for laboratory reports.

To enable laboratories and other approved users to easily analyse their own data in near real time.

Methods

Options were considered for developing a system which could quickly and accurately produce time series graphics of Cosurv laboratory reports.

If the system was to be made available to stakeholders then it had to be web-based.

A company specialising in secure web applications was identified and commissioned to take on the project in conjunction with the East of England Regional Epidemiology Unit. [Camart, UK] SQL Server database and .NET web technologies were used and implemented on a stand-alone web server housed behind a Cisco firewall.

The unit's existing Cosurv SQL database was augmented to allow provision of an anonymised subset of surveillance data, introducing appropriate logic to enable meaningful time series analysis via a web front-end.

A number of beta-versions of the website were produced until the system was ready to be released to microbiology laboratories in the East of England. Further work is being undertaken to add a seasonally-adjusted exceedance algorithm, which also takes into account reporting delays, estimating expected weekly totals.

Results

The website was offered to staff in laboratories across the East of England in November 2007. The system has successfully generated highly flexible time series graphics of lab data very quickly even over relatively slow internet connections. It is menu and toggle-driven, allowing selection of time intervals, time bases and combinations of organisms and specimen types.

Conclusions

This project represents a significant step towards achieving best practice in surveillance: encouraging providers of information to look at, understand and analyse their own data. Through automation it has transformed the monitoring of important disease trends at the regional level, enabling multiple analyses which were previously too labour-intensive to undertake.

Contact: iain.roddick@hpa.org.uk

A good example: the national drug-related deaths index

S Lyons, E Lynn, L Coleman, S Walsh, J Long

The Alcohol and Drug Research Unit (ADRU), Health Research Board (HRB), Lower Mount Street, Dublin

Aim

In 2005, the National Drug-Related Deaths Index (NDRDI) was set up to comply with Action 67 of the National Drug Strategy, in order to inform policy and practice for harm reduction and prevention of drug-related deaths. This surveillance system will be a census (90% complete and 95% accurate) of drug and alcohol-related deaths and deaths among drug-users in Ireland.

Methods

The database was developed and validated by European experts, drawing on the best examples available in Europe. To ensure completeness, data from several sources is collected: the General Mortality Register (GMR), coronial records, acute hospitals (Hospital In-Patient Enquiry System [HIPE]) and the Central Methadone Treatment List (CTL). Information collected includes:

- Demographic details (including names)
- Socio-economic information
- Problem drug and alcohol use at the time of death
- Risk behaviours
- Medical diagnosis
- Drug or alcohol treatment history
- Details about the death itself
- Results of toxicological analyses

The data is received in electronic form from GMR, CTL and HIPE. It is collected in-person from coronial paper records by ADRU staff and entered directly into a secure database.

Results

Data have been collected retrospectively from 1998 to 2005 on all drug-related deaths. Since 2004 alcohol-related deaths have been included. 80% of data have been collected from coronial records while 100% of data have been collected from the other sources. The first report is due summer 2008. There are some limitations related to time-lag and data collection.

Conclusions

This surveillance system was developed following the advice and example of European expertise. It is a new system, rather than a revision of an existing system and is a good example of what can be done with sufficient resources and expertise. It aims to offer timely information for an important public health issue in Ireland today.

Contact: slyons@hrb.ie

Oh no! Not another data request? Automated collection of *C. difficile* data

MT Thomas, M Roberts, R Henry

NPHS-Informatics

In September 2004, the Welsh Assembly Government launched 'Healthcare Associated Infections - A Strategy for Hospitals in Wales', stating that surveillance of laboratory confirmed infections due to *Clostridium difficile* would become mandatory in Wales. One of the major perceived difficulties of this request was the collection of data from 12 microbiology laboratories distributed throughout the whole of Wales, each employing different diagnostic methodologies and reporting mechanisms.

As with numerous other research and surveillance projects the starting point was the data held on specimens received at microbiology laboratories. All surveillance projects requiring laboratory data need to overcome the difficulties of extracting data from a number of laboratory systems. In response to this NPHS Informatics has developed the Microbiology DataStore, which has now been rolled out to all microbiology laboratories in Wales.

This presentation will describe how through the use of the Microbiology DataStore the extraction, collection and presentation of *Clostridium difficile* data is now a fully automated process and how the techniques employed can easily be extended to include other organisms of epidemiological significance.

Contact: mark.thomas@nphs.wales.nhs.uk

Evaluation of a pilot enhanced invasive pneumococcal disease (IPD) surveillance system by HPA North East

D Wilson, V Decraene, R Gorton, M Browne

North East Health Protection Unit

Aims

To improve understanding of the epidemiology of invasive pneumococcal disease (IPD); ascertain uptake of pneumococcal vaccine in eligible patients prior to their episode of IPD; assess the feasibility and usefulness of long-term enhanced surveillance of IPD in the North East in all age groups.

Methods

A case was defined as a North East resident of any age with laboratory-confirmed IPD between 1st April 2006 and 31st March 2007 inclusive. Cases were ascertained via prompt reporting by local NHS microbiology labs to the Health Protection Unit (HPU). HPU staff collected an enhanced dataset (including demographics, laboratory and clinical information, risk factors for IPD, immunisation history) for each case by contacting hospital and primary care. Serotyping results were provided by HPA Respiratory and Systemic Infections Laboratory (RSIL). Sensitivity was estimated by comparison with CDR reporting and samples reported to RSIL in the absence of a 'gold standard.'

Results

The evaluation found that the surveillance system was feasible, met most of its aims, and collected data of a high quality. A total of 298 cases were identified during the pilot year aged from 1 day to 98 years. The pilot system demonstrated the burden of IPD in the North East with variations in incidence by age and locality. There was age-specific variation in serotype distribution. A significant burden was identified in those aged 45 to 64 years (more than 25% of all IPD cases).

Conclusions

This enhanced surveillance system is feasible and can provide information that will be valuable in informing regional prevention and control strategies and in interpreting changes to the epidemiology of IPD across all ages (age-specific

incidence rates, serotype distribution across age groups and localities) that are expected in response to the introduction of conjugate pneumococcal vaccine into the routine immunisation programme in September 2006.

Contact: deborah.wilson@cdd.nhs.uk

How record linkage can add value to surveillance data: uses of probabilistic record linkage

N Potz, D Powell, A Grant

Health Protection Agency, Centre for Infections, Colindale, London

Aims

Securely-held patient-identifiable data is used both locally and at national level for public health purposes. Linking datasets is an extremely useful tool for both research and data management and probabilistic record linkage is a powerful method that can be made to work even when data and identifiers are incomplete and error-prone. We discuss its capability and limitations with reference to current work at the Health Protection Agency (HPA) Centre for Infections (Cfi) in London.

Methods

Mortality following methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia in England has been investigated using probabilistic linkage of records of laboratory-confirmed MRSA bacteraemia reported to Cfi with death registrations from the Office for National Statistics (ONS).

Duplicate reporting of records of laboratory-confirmed infection to the Cfi LabBase system is detected by a system which is presently being upgraded to use probabilistic linkage.

Results

Analyses of mortality following MRSA bacteraemia have been undertaken using probabilistically-linked infection and death records. These were previously not possible as the necessary information was not held in either of the individual datasets.

The LabBase project is still being developed. It is already clear that probabilistic linkage gives more insight into borderline cases that may or may not be true instances of duplicate reporting.

Conclusions

Probabilistic record linkage is a very useful technique to link two surveillance databases thereby enhancing the interpretive value of the data in both. It can also be used to improve data quality by removing redundant replicated records from a single database.

Contact: andrew.grant@hpa.org.uk

Collection of Welsh ICU line infection data in collaboration with patient quality improvement programmes

WA Harrison¹, EM Davies¹, D Hope², C Hancock²

1 On behalf of the Welsh Healthcare Associated Infection Programme (WHAIP), Temple of Peace and Health, Cardiff

2 On behalf of the Welsh Critical Care Improvement Programme

Aim

In 2007 the Welsh Assembly Government commissioned WHAIP to introduce mandatory surveillance of Central venous catheter (CVC) infections associated with ICUs in Wales. Due to known problems with surveillance data collection with regard to resources and time implications the aim was to facilitate collection of the required dataset with minimum burden to staff locally.

Method

Care bundles are evidence-based interventions grouped in a single protocol to improve patient outcome. The Critical Care Improvement Programme introduced a care bundle for CVC insertion and maintenance within ICUs providing an opportunity for collaboration of data collection. A pilot surveillance system was implemented based on paper form data collection devised by WHAIP. With the aid of Welsh intensivists a core dataset was determined including European pre-defined infection definitions. Data was collected each time a line was inserted on ICU.

Results

Voluntary participation by all Trusts in Wales was achieved within 4 months of the pilot. Completed forms were returned to WHAIP on a weekly basis and scanned data was returned electronically to hospitals within 1 week. Clinicians requested regular feedback so monthly reports were produced of line infection rates. Rapid turnaround enabled data inaccuracies to be amended immediately leading to almost 100% of data available for analysis.

Conclusions

Group collaboration to share information is an important factor when developing specific surveillance schemes. The process has allowed collaborative development of the dataset and clinician ownership. The resulting collection of meaningful data for intensivists on CVC infections was essential for rapid enrolment to the scheme and complete compliance by all Trusts in Wales. This partnership will undoubtedly be crucial to the further successful development and running of ICU surveillance in Wales.

Contact: wendy.harrison@nphs.wales.nhs.uk

Tuesday 29 April 2008

Session II

Environmental Issues: New Challenges for Health Protection

Assessing the public health impact of the June 2007 floods in Doncaster

S Paranjothy¹, T Baxter², R McNaught³, R Amlôt⁴, L Page⁴, J Rubin⁵, S Jones¹, RE Stiff¹, SR Palmer^{1,4}

- 1 Department of Primary Care and Public Health, Cardiff University
- 2 Doncaster Primary Care Trust and Doncaster Metropolitan Borough Council
- 3 South Yorkshire Health Protection Unit, Sheffield
- 4 Health Protection Agency
- 5 King's College London, London

Background

The Yorkshire and Humberside region was severely affected during the June 2007 floods, with thousands of businesses and homes flooded. In Doncaster, a town in South Yorkshire, the flooding severely affected residents in the adjacent communities of Toll Bar and Bentley, many of whom were evacuated. As part of the public health response there was a need to assess the impact of the flooding on the well-being of the communities living in affected areas.

Aim

To assess the physical and mental health impact of the floods for residents living in affected areas.

Study design: Cross-sectional study

Methods

Study population was defined as the residents of the Toll Bar and Bentley areas of Doncaster. Information from the Doncaster Metropolitan Borough Council was used to identify properties that were flooded (n=939). In addition we randomly selected 1376 properties that were unaffected. Questionnaires were completed either by telephone, online or by post. Primary outcome measure: Prevalence of psychiatric distress (GHQ-12)

Results

The response rate was 37% (n=847). 27% of respondents were resident in flooded properties. 49% of exposed respondents reported that they still had health worries. Data analysis is ongoing and we will present the prevalence of physical symptoms and psychiatric distress according to exposure (flooded) and other factors such as socio-demographic characteristics, evacuation, extent of household damage and previous experience of flooding.

Conclusion

These findings will inform emergency planning and response to future episodes of flooding and identify risk factors for psychological morbidity that can be targeted in future interventions. Discussion will also include the challenges of collecting information in a timely manner to assess population health needs following such large scale events.

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Public health response to contaminated land: developing a framework to explain who is responsible for doing what

Kirsty Foster¹, Mark McGivern¹, Jamie Bond², Deborah Wilson¹, Karen Lloyd³

- 1 North East Health Protection Unit
- 2 Chemical Hazards and Poisons Division
- 3 Health Protection Agency North East

Background

Investigation of contaminated land and the consequent public health risks is a relatively new area of work for health protection and public health teams. The work is often complex and can

involve contentious and emotive topics. A number of organisations have different statutory and advisory roles in such work, and being clear about roles and responsibilities of those involved can greatly aid the management of such incidents.

Aims

This paper describes the development of a local framework for the management of contaminated land incidents.

Methods

Following several contaminated land investigations across the North East of England, members of the health protection teams, local PCT public health departments, specialists from CHaPD and communications teams met to reflect on lessons identified from the management of incidents.

Results

Key findings relating to public health were

- A joint health meeting should be arranged as soon as possible after the notification of the incident to coordinate the response, clarify expected 'rules of engagement' and roles of health organisations and share information.

The Director of Public Health would normally be expected to lead this process, although this may vary between organisations depending on experience, resources etc.

- Need for clear agreement of 'rules of engagement' at earliest possible opportunity including what support can be offered, and expected ways of working (e.g. minutes circulated, opportunities to respond, lead organisation, communications arrangements)
- Information about an incident should be shared freely between partner organisations as early as possible – taking into account sensitivities about confidentiality, commercial interests and local politics to engender trust between organisations.

Outcomes

Key issues identified from the investigations were used to structure a local framework describing the roles of the various organisations involved in such investigations and a standardised approach for engaging stakeholders in the initial stages of a contaminated land investigation.

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Impact of climate change on future incidence of selected food-borne diseases

E Cullen

HSE Department of Public Health, Stewarts Hospital Sports Centre, Palmerstown, Dublin

Aims

As a result of climate change, the mean annual air temperature in Ireland has increased by 0.5°C over the last 100 years. This is comparable to the global 0.6°C rise. As the incidence of food-borne disease is temperature related, increases in the incidence of food-borne diseases may be expected in Ireland. This study aims to quantify such changes.

Methods

Using morbidity data from the Health Protection Surveillance Centre, and meteorological data from Met Eireann, the present temperature-morbidity relationship was established for *Salmonella*, *Campylobacter* and VTEC. Future temperatures that may be expected in Ireland were obtained from the Irish Climate and Analysis Research Group, in NUI Maynooth. These temperatures were obtained from global climate models modified for Irish conditions, and driven by specified greenhouse gas emission scenarios. Using analogue approach, curve fitting and modeling techniques were used to estimate future impacts of temperatures changes on the incidence of these food-borne diseases, and estimates were made of the incidence of these diseases, for three time periods, 2010-2039, 2040 to 2069 and 2070 to 2099.

Results

Changes in the incidence of food-borne disease were estimated, and increases in the future incidence of *Salmonella*, *Campylobacter* and *E. Coli* 0157 were quantified and presented with reference to baseline levels.

Conclusions

Notwithstanding the multi-factorial aetiology of food-borne diseases, close links will be required between health surveillance systems and meteorological services in order to more closely monitor the impact of climate change on the incidence of these diseases.

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Surveillance of mains water-associated communicable disease incidents: is earlier detection possible through mapping of cases to water supply zones?

Daniel Thomas¹, Carol Weatherley², Rachel Chalmers³, Nathan Lester⁴, Hugo Cosh⁴, Mike Withers⁵, and Brendan Mason¹ on behalf of the Water Health Partnership for Wales Data Sharing Task and Finish Group

- 1 National Public Health Service Communicable Disease Surveillance Centre
- 2 Dwr Cymru
- 3 UK *Cryptosporidium* Reference Laboratory
- 4 National Public Health Service Health Information Analysis Team
- 5 United Utilities

Background

In recent years a number of outbreaks of communicable disease in the UK have been associated with mains drinking water. In Wales, an outbreak of *Campylobacter* gastroenteritis in a South Wales housing estate was associated with contamination of a covered holding reservoir, and, in 2005, a large outbreak of cryptosporidiosis in North Wales was associated with contamination of a reservoir.

The Water Health Partnership for Wales was established in 2006, bringing together water companies, regulators, local authorities, health professionals and Welsh Assembly officials. As part of this initiative a 'Data Sharing Task and Finish Group' was established to improve the sharing of data and information between organisations.

Aim

The sharing of geographically-referenced public health and water company data; to explore the potential for improving surveillance of mains water-associated communicable disease incidents.

Methods

A retrospective analysis of *Cryptosporidium* incidence by Dwr Cymru water quality zone in 2005, including thematic mapping of rates.

Results

Five hundred and fifty-eight laboratory-confirmed *Cryptosporidium* cases were reported for Welsh residents in 2005. Grid references were assigned to 92%. Monthly incidence rates by water quality

zone varied from 0 to 183 per 100 000 residents, with 9 zones (10%) in the highest activity category in at least one month. One of the zones affected by the North Wales outbreak was in the highest activity category during the outbreak period (September to December 2005) but also in the preceding May.

Conclusions

Integrating mapped disease surveillance data with water supply data is feasible. Retrospective analysis indicates that by routinely presenting *Cryptosporidium* incidence by water quality zones, the North Wales outbreak might have been detected earlier. Preliminary work has focused on *Cryptosporidium*, but the approach could be applied to other gastrointestinal organisms such as *Campylobacter*, *Giardia*, *E.coli* O157 and enteric viruses.

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To boil or not to boil: the value of boil water notices

RM Chalmers¹, DP Casemore², BW Mason³

- 1 UK *Cryptosporidium* Reference Unit NPHS Microbiology, Swansea
- 2 Centre for Research Into Environment and Health, Aberystwyth University
- 3 Communicable Disease Surveillance Centre, Cardiff

Aim

Assess the value of boil water notices (BWN) in outbreak management.

Method

Legal responsibility for issuing a BWN rests with the water undertaker, but the decision making process differs depending on each incident or outbreak. Based on experience of investigating outbreaks of cryptosporidiosis, and searches using the terms 'boil water' and 'contamination', 'effectiveness' or 'response' or 'risk', we evaluated the evidence for public health benefits and question widely held beliefs regarding negative effects (poor compliance, scalds and anxiety, loss of confidence in supply) of BWNs.

Results

Reasons for non-compliance vary (not aware, lack of belief, forgot to apply it) but this is not sufficient reason for doubting effectiveness of the action itself. Even if only 30% of the population boil their water, that is 30% fewer exposed and the public have a right to make an informed decision. Risk of scalds can be minimized with clarification that water only needs to be brought to the boil, which is sufficient to kill most pathogens, including *Cryptosporidium*. Some consumers will switch to bottled water rather than boiling, and this is a readily available alternative for those with normal immunity. Anxiety about the notice may be outweighed by that regarding the risk of illness. Although the 'Bouchier' Report recommends that agreeing criteria for removing the notice are part of its implementation, the outbreaks in Torbay in 1995 and northwest Wales in 2005 demonstrated that criteria can be difficult to define initially.

Conclusion

The disadvantages of BWNs have been overplayed. This is a valuable tool in the management of outbreaks of cryptosporidiosis, especially if applied on a precautionary basis at an early stage. The poor compliance suggests the need for more proactive and constructive communication, not abandoning the only immediate control measure available.

Contact: Rachel.Chalmers@nphs.wales.nhs.uk

Tuesday 29 April 2008

Session III

Health Protection in Vulnerable People

Improving sexual health and blood borne virus services in prisons in the South West of England

I Anya¹, J McCulloch¹, I Oliver¹, R Shakespeare²

¹ Health Protection Agency South West

² Public Health Team, Government Office South West

Aim

To produce guidance on commissioning sexual health services in prisons in the South West of England

Background

Prison populations are multiply disadvantaged and often have higher rates of injecting drug use and blood borne virus infections than the general population. There is also evidence of higher rates of sexually transmitted infections among prisoners.

Following transfer of responsibility for commissioning of health services in prisons in England to the NHS in 2006, a rapid assessment of prisons in the South West was conducted by the Regional Public Health Group. Of the 14 prisons in the region, only two scored green on the sexual health and blood borne virus red-amber-green indicators.

Methods

A steering group with membership including GUM clinicians, health protection specialists, prison staff and commissioners was formed to produce guidance for commissioners to improve these services and to identify and disseminate areas of good practice.

Results

The steering group identified a number of priorities including identifying a commissioning strategy, improving information sharing and surveillance, providing training and ensuring access to services. The draft guidance was circulated for consultation and is currently in the process of implementation.

Conclusion

In this presentation, we explore the background to this development, review the process of developing guidelines, present the priorities that were identified and highlight some of the examples of good practice in the region.

Contact: ike.anya@hpa.org.uk

Blood borne viruses among prisoners: out of sight, out of mind?

D Read¹, F Reynolds²

¹ Blackpool PCT

² Greater Manchester Health Protection Unit

One quarter of adult male prisoners have injected drugs, and 6% inject whilst in prison, according to a national survey of risk behaviours for transmission of blood borne viruses among prisoners in England and Wales. A survey of prisoners by the Public Health Laboratory Service in 2004 found that among those tested, 0.4% were HIV positive, 7% had antibodies to Hepatitis C (HCV) and 8% to Hepatitis B (HBV). Among adult intravenous drug users, 0.5% were HIV positive; while for Hepatitis, the situation is very different: 31% had antibodies to HCV and 20% to HBV.

These facts raise the following issues to be dealt with when tackling the transmission of blood borne viruses in prison.

- Sharing equipment – health promotion messages are not reaching injecting drug users. Ideas around the provision of NEX in prisons creates several questions for the management of prisons and indeed the public view of how prisons should be run;
- Prisons – 47% of injecting drug users served prison sentences before beginning to inject.

This would suggest that prisoners could be a target group for sustained health promotion and preventative work.

Communicable disease in prisons can also have a very negative impact on the wider community – prisoners are rarely detained for life. Prison contracted diseases therefore pose a serious threat to the wider population as diseases can be easily spread once the prisoner is released. Prisons can have a direct effect on the health of urban populations by offering health care and health promotion to prisoners; by linking inmates to community services after release; and by assisting in the process of community reintegration.

This presentation will discuss measures that have reduced transmission of such viruses within prisons and improved prisoner health, focusing on a peer support project delivered in HMP Lancaster Farm.

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An outbreak of measles after a funeral among Irish travellers, England, March to June 2007

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On 3 April 2007, two confirmed cases of measles among members of the Irish traveller ethnic group in England were reported to the Health Protection Agency. The same day, a funeral event in South-East London gathered an Irish travellers community. The HPA conducted an investigation to determine the extent of this outbreak in order to ensure appropriate control measures and to inform prevention of future outbreaks.

We defined a probable case as a member of the Irish travellers community or a person who had contact with a confirmed case associated with this outbreak within the four weeks of onset with a

clinical diagnosis of measles after 3 April 2007. A confirmed case was a probable case with IgM or RNA laboratory confirmation.

Between 3 April and 30 June 2007, we identified a total of 171 cases (122 confirmed and 49 probable cases) from seven out of nine regions in England. Two additional confirmed cases who attended the event on 3 April had onset in late March and were included in our description. One hundred fifty six cases were members of the Irish travellers community and 17 non travellers reported an epidemiological link to the outbreak. One hundred thirty two cases (76.3%) were between 1 and 14 years old. None of the 94 confirmed cases eligible for vaccination and for whom information was available was vaccinated against measles at the period of exposure.

Low vaccination coverage and movement of travelling community members present a particular challenge for measles elimination in Europe. We recommend the creation of traveller health infrastructure at local level in England involving the Irish Traveller Movement, the identification and training of PH nurses dedicated to travellers and the implementation of an efficient system for keeping traveller patient records tracking, and transferring them when families moves.

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Managing tuberculosis in disadvantaged communities

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Between 1997 and 2003 eight cases of *Mycobacterium tuberculosis* were identified in a family cluster in the North East of England – four cases in 1997 and four cases in 2002-2003. Following further contact tracing and a complex genogram, a further five cases were included, bringing the total number of cases to thirteen. By November 2006, we had 15 cases from this cluster, of which 3 sadly have died.

An index case(s) has never been identified and many of the contacts have been screened on

several occasions. In April 2006, 53 were screened with Quantiferon Gold, from which 16 were given chemoprophylaxis but none given treatment for active tuberculosis. Nevertheless, re-infection and reactivation remains an issue, e.g. a contact screened in 1997 has recently screened positive again.

Everyone in this large cluster is white British, born and brought up in the area, with no history of anyone living or travelling abroad. They live in close proximity as brothers, sisters, parents, cousins and partners with complex social and familial relationships. Children and adults socialise with each other on a daily basis. Long-standing poverty is a feature of their lives and some have chaotic lifestyles in which alcohol plays a part.

Communicating and involving the family has been key to our work. Breaking into this tight network has meant building up a relationship with key family members who have then persuaded and encouraged others to be tested and treated. With 93 contacts identified this has been no easy task. Staff have particularly worked with the women in the family who have played a crucial role in identifying contacts and providing support. For example, two of the sisters took on the role of supervising the treatment of two cases to ensure compliance.

Encouraging more active involvement of families, as this presentation suggests, could provide a way forward in controlling TB in people who do not easily engage with health services.

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Improving infection control in long stay care homes

Sarah Brill

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There is an increasing requirement to deliver long term nursing care to vulnerable elderly people. The Care Standards Act 2000 and DH Care Homes for Older People National Minimum Standards form the basis for The Commission of Social Care Inspection (CSCI) inspections of care homes. Standards 19-26 focus on infection control but lack

specific details. Local commissioners felt there was a need for more detailed standards to encourage good infection control practice, particularly in the six homes commissioned to provide long term (as opposed to residential) care. The local Primary Care Trust, Borough Council and Health Protection Unit worked together to develop a suitable audit tool adapted from the Infection Control Nurses Association infection control audit tools for Acute and Community.

An initial audit showed deficiencies in regard to effective cleaning of rooms and equipment, safe decontamination of commode pots and hand hygiene. Most homes had guidelines, training programmes and procedures in place for sharps injuries and waste disposal.

The findings of the audit were a surprise to all six homes. Their managements were not familiar with developing action plans and required guidance in developing interim measures to reduce risk until remedial actions could be completed. As a result of the audit the commissioners have given notice to terminate current contracts and develop new ones. Most of the homes found the audit very useful and were very enthusiastic to get remedial works done.

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Cause specific mortality and survival analysis in sex workers attending a drop-in service

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3 Health Protection Scotland, Glasgow

Aims

Globally sex work has been associated with an increase in premature morbidity and mortality. There is a dearth of information regarding mortality and cause of death in sex workers in the UK. In order to measure mortality in sex workers, cause specific mortality was assessed in a cohort of sex workers who attended a Glasgow based drop-in service.

Method

This is the first UK based study to use a database linkage methodology. Linkage was carried out between the service database of attendees (between 1989 and 1996) and the General Registrar of Scotland: National Health Service Central Register (GROS:NHSCR). This used a deterministic methodology to carry out the linkage.

Results

The average duration of follow-up was 11.8 years. By the middle of 2007, 45 cohort members had died. The crude mortality rate was 22.02 per 1000 person years- higher than previous studies. The average annual mortality rate was 27.7/1000 person years compared to 17.7/1000 found in Glasgow's injecting drug users (IDU) and 0.83/1000 found in Glasgow's female population in 2001.

Standardised mortality ratios were high when compared to both Glasgow's female population in 2001 and to the most deprived female quintile. Overall SMR was 34.83. Overdose and other drug related causes were found to be the most common cause of death in this cohort, which comprised of 89% injecting drug users.

Conclusions

This study is the first in the UK to explore mortality in sex workers using a data linkage methodology. Sex work was found to be associated with a significant excess mortality. The relationship between sex work and IDU is complex and in this study, it was found to be an important factor in excess deaths. Given the phenomenally high mortality rate, public health interventions need to concentrate on reducing this mortality burden.'

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Wednesday 30 April 2008

Session IV

Outbreak and Incidents: Evidence or Intuition?

Communicating complex results: balancing risk to individual and public health with anxiety about the wider impact of results

Kirsty Foster¹, Karen Lloyd²

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2 Health Protection Agency North East

Aims of this paper

This paper describes the challenges of presenting complex information about health risk to members of the public.

The incident

In August 2006, HPA NE became involved in the investigation of a fatal case of inhalational anthrax. African drums kept at a property in the north of England were identified as a potential source of the infection.

Samples were taken from drums and animal skins held at the property, from surfaces and furnishings within the property, from the vehicle used to transport the drums and from the doorways of neighbouring properties were examined for the presence of *Bacillus anthracis*.

Samples from the drums, animal skins and one room of the house tested positive on culture for *B.anthraxis*; other samples from within the house were pcr +ve.

Communicating the results

The challenge for the local HPU team involved was the communication of these complex results to the occupiers of the property and the neighbouring residents.

A meeting was held with residents to discuss the findings and proposed actions. The main concerns of the residents was about the impact of the results on their livelihood (in a rural area still remembering the impact of the 2001 Foot and mouth outbreaks) rather than their own health.

Conclusions

Meeting the residents in a small group was an effective way of communicating complex results and allowing them to explore their concerns.

It is important to remember that people's concerns may be for things other than their own health, and impact on livelihood, reputation and community can be as important as risks to physical health.

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Challenges in investigating outbreaks presenting as a regional excess of cases of a particular type of *Salmonella* infection: an example of *Salmonella* Typhimurium U313

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Aims

To describe the challenges of investigating outbreaks presenting as a regional excess of cases of a particular type of *Salmonella* infection, including the issues involved in investigating food supply chains. We will use the example of an outbreak of *Salmonella* Typhimurium Phage Type U313 during autumn/winter 2007 in the North East of England to illustrate these challenges.

Methods

Following the reporting of higher than expected rates of *Salmonella* Typhimurium U313, cases were interviewed using trawling questionnaires and food sampling was undertaken in the supply chain to identify possible sources. Food supply chains were then traced to further examine the cause of disease – in this case eggs were suspected.

Health Protection Units in other UK regions were contacted and provided information on any cases in their area.

Results

Challenges included the difficulties of conducting trawl questionnaires after an inevitable time lag, response bias and a variation in the quality of feedback from colleagues working in environmental health. These factors limit the success of generating hypotheses to test. In addition, when identifying food supply chains (in this case for eggs) there are often logistical issues, including tracing of the supply chain across the region and in some cases across the country and overseas. If the number of cases is small, this compounds the difficulties in undertaking analytical studies.

Conclusions

Investigating outbreaks presenting as an excess of cases ascertained by routine surveillance is stimulating and 'cutting edge' health protection work. It is useful to share knowledge of how to deal with these situations and to learn from experience to enable rapid identification of sources, ultimately reducing the burden of disease from these pathogens.

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A large tuberculosis outbreak involving two crèches

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[On behalf of the Outbreak Control Team and Expert Advisory Group]

Background

In March 2007 a symptomatic crèche worker case of sputum smear positive pulmonary TB was notified to the Department of Public Health, HSE-South in Cork. The case had worked in two large crèches - in crèche A for over one month and, prior to that, in crèche B for most of the preceding two years. The case had worked mainly with toddler children in both facilities.

Investigation

All children and adult workers at crèche A (127 children; 33 adults) were offered mantoux screening, with chest x-rays as indicated.

Screening at crèche B followed (147 children; 34 adults). In view of the extent of early findings, chest x-rays were subsequently included as part of the screening criteria for Round 1 in both creche populations regardless of mantoux results. Mantoux negative asymptomatic children were offered isoniazid prophylaxis ('window prophylaxis') between screening rounds. Screening was also later extended to visiting parents and siblings identified as having had close contact with the index case. An Outbreak Control Team and Expert Advisory Group oversaw the decision making process throughout.

Main Findings

Overall, eighteen child cases of active TB were detected (6 crèche A; 12 crèche B). Eleven were mantoux positive on initial screening (range 12mm-20mm); seven were mantoux negative. Most were symptomatic, mainly with non-productive coughs. None had previous BCG vaccination. Two adult pulmonary cases (crèche workers) were detected in crèche B.

Conclusion

This was the largest reported TB outbreak involving young children in recent decades in Ireland. Learning from its investigation and control should inform any future such outbreaks in child care settings in this country.

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Review of an outbreak investigation: the case for controlling the use of case-control

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Aims

To consider whether the conclusions of a pragmatic investigation of a cryptosporidiosis outbreak stood up to academic scrutiny and whether the results

would have been affected, in any significant way, by the addition of a case-control study.

Methods

The methodology of an investigation into a swimming-pool associated cryptosporidiosis outbreak with 16 confirmed cases was critically appraised.

A literature review identified 20 studies into similar outbreaks. The ten most relevant were appraised using Critical Appraisal Skills Programme (CASP) criteria and graded using the CDSC classification of waterborne outbreaks. The findings were used to consider the results and conclusions of our own investigation and assess whether a case-control study would have added value.

Results

Various methodological limitations to our investigation were identified, notably that a case-control study had not been done. However, with low numbers of primary cases a case-control would have been underpowered. The quality of evidence in the appraised analytical studies varied, with some lacking sufficient power or academic rigour to show believable statistical associations with the swimming-pools. Even in these studies, using the CDSC grading, weight of environmental and microbiological evidence, alongside descriptive epidemiology, helped confirm the outbreaks were associated with pools. The investigated outbreak was graded as 'possibly' associated with a swimming pool system. Using an underpowered case-control study would not have changed this.

Conclusions

Despite methodological limitations, the conclusions of the investigation held with academic scrutiny. Using a case-control study would not have strengthened the level of association found with the swimming-pool, so would have been a waste of valuable time and resources. Case-control studies are generally considered the 'gold standard' for outbreak investigations. However, with insufficient power to show statistical significance or the methodology lacking sufficient rigour their value becomes questionable. Despite some limitations the CDSC criteria provide a useful additional tool for assessing waterborne outbreaks.

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H5N1 avian influenza in Suffolk: do we learn from our experiences?

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Aims

- 1 To describe and compare the lessons identified following two highly pathogenic H5N1 Avian Influenza poultry outbreaks in Suffolk occurring nine months apart.
- 2 To evaluate the HPA 'lessons identified' process.

Method

All organisations involved in an incident are invited to take part in debrief sessions following an incident. From these sessions a number of recommendations are made. The HPA debrief reports from both H5N1 incidents in Suffolk were compared to see if recommendations from the first outbreak had been followed and improvements made to the handling of the second. The management review tool, used for the first outbreak, was developed further locally and used for the second outbreak.

Results

Thirty-one recommendations to improve multiagency incident response were identified from the debriefing process following the first outbreak. There were also four outstanding recommendations from a previous H7N3 avian influenza outbreak in Norfolk in 2006. Recommendations were made under three main headings; concept of operations, multi-agency working and support functions.

The review process of the second outbreak identified that the majority of these original recommendations had been completed enabling a more effective management of the second outbreak. Some of the 14 recommendations from the second outbreak were ongoing issues from the first whilst a small number were new considerations. Feedback from partner organisations involved was that the second outbreak was managed smoothly and efficiently. This was supported by the fact that public health interventions were implemented timely and effectively.

Conclusions

Many of the recommendations from the first outbreak had been implemented by the time the second occurred enabling a more efficient handling of the incident. There are still some important areas that require consideration. The management review tool and process used for both incidents proved useful in identifying areas of development and improvement. These points will be discussed in detail.

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Unprotected sex and the city: the importance of intuition in initiating investigation of an HIV outbreak in Cardiff allowing mapping of wide area sexual networks

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Background

In Spring 2007, two men who have sex with men (MSMs) were diagnosed HIV positive in Cardiff GUM within days of each other.

Initial sexual contact history identified 74 individuals requiring contact tracing, suggesting to clinicians a network of high risk sexual contacts. The NPHS Local Health Protection Team (HPT) became involved and established that the two initial cases were sexual contacts of each other and had an additional 5 mutual sexual contacts indicating a highly interconnected sexual network.

Method

An outbreak database was established and telephone provider contact tracing was undertaken for all the sexual contacts indicated by each newly diagnosed HIV positive individuals. Where sufficient details were provided, the contact was offered HIV testing and for those within the 3 month window period, provision was made for retesting. Full sexual health screening was completed when possible. Those without sufficient detail remained 'untraceable'.

Results

Ninety (73%) individuals of the 123 identified were successfully contacted. Eleven confirmed they were already HIV positive; 18 did not come forward to GUM for testing; the remaining 61 were tested and HIV status determined. Fifteen individuals were newly diagnosed with HIV, all were male and 12 were exclusively MSM. The network map of sexual contacts and cases spread across the UK with greatest density in South Wales, all were MSMs except for 7 men who self-identified as bisexual and 5 heterosexual women. This population also reports high risk sexual behaviour, previous HIV tests and concurrent STIs.

Conclusions:

Well-informed and HIV educated individuals continue to transmit HIV and other STIs in highly active, casual high risk sexual networks. Widespread, highly interconnected sexual networks may be mapped and HIV diagnosis rates increased through rigorous contact tracing demonstrating both the value of collecting evidence to verify clinical intuition and HPT expertise to GUM Clinicians.

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Wednesday 30 April 2008

Session V

Late Breakers and Hot Topics

Extensive transmission of *Mycobacterium tuberculosis* from a 9-year old child with sputum smear-negative pulmonary tuberculosis: how we managed the media

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Usually, sputum smear-negative children with non-cavitating pulmonary tuberculosis are not considered to be infectious.

High infection rates in family and class contacts of a 9-year old boy with smear negative, culture positive *Mycobacterium tuberculosis* and non-cavitating pulmonary disease led to screening all pupils (n =200) and staff (n=120) of a primary school. No adult source of infection was detected, but 85 (42%) pupils of the junior school had a reactive gamma interferon release assay indicating infection with *M. tuberculosis*. and 18 children had pulmonary changes on chest x-ray consistent with tuberculosis.

The school is located in an area where indices of deprivation are high. Initially, parents and the general public were unwilling or unable to accept information and advice from the local Health Protection Unit. (HPU). There was significant local, regional and national media interest particularly in testing which required venepunctures and chest x-rays for 200 children. Media coverage was intense when the mass x-ray unit appeared at the school and on the days when results were distributed to parents.

HPU staff spoke with individual parents and held meetings at the school. Nationally and locally produced public information leaflets were distributed. Individual results and their significance were explained to parents. Press releases were made, two press conferences were held and interviews were given to local and national television and radio stations. At the request of the

HPU, psychologists from the Institute of Psychiatry conducted a study to examine the role of understanding, risk perception and related factors in determining the levels of distress experienced and levels of parental satisfaction with information provided.

Parents and the general public responded well to the psychological study and to accurate reporting from a local radio station, which was provided with detailed information about tuberculosis by HPU staff.

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Lyme borreliosis in the 5 nations: epidemiology, management, prevention, misdiagnosis

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Lyme borreliosis, a tick-transmitted infection, is the most common vector-borne disease in the temperate northern hemisphere. Numerous endemic areas are present within the 5 nations, and estimates suggest that several thousand cases occur annually. Voluntary reporting of laboratory-confirmed infections has increased since 2000. Most indigenous infections result from residential or recreational risk, with few occupationally acquired infections. There has been a significant rise in infections acquired abroad, through holiday recreational activities and migration from high-endemic countries.

Lyme borreliosis is rarely, if ever fatal, but can cause significant morbidity, particularly from neurological complications. It is treatable at any stage of infection;

early treatment is highly effective in preventing complications. There are good quality evidence-based guidelines for diagnosis and management, and diagnostic tests have improved greatly.

Prevention is better than cure. No vaccine is currently available. Considerable research effort has gone into environmental measures to reduce risk (particularly in the USA) with very limited success; prevention strategies rely mainly on personal protection against tick bites. Tick awareness, appropriate skin protection in 'ticky' areas and early removal of attached ticks are all important measures. Most ticks do not carry borreliae. Infected ticks do not transmit borreliae within the first few hours of a feed.

Misinformation about Lyme disease is rife, particularly from Internet sources. Fringe groups promote the diagnosis of 'chronic Lyme disease' in patients with conditions such as MS, motor neurone disease, autoimmune diseases and medically unexplained conditions such as ME/CFS. A small proportion of patients with Lyme borreliosis may have continuing symptoms following appropriate treatment (post-Lyme syndrome). Trials have shown that patients with genuine PLS do not benefit from prolonged or repeated antibiotics. Many 'CLD' patients receive very prolonged parenteral antibiotics and other agents. Mistreatments have caused numerous serious harms and some deaths and missed opportunities for appropriate managements. This problem is increasing within the 5 nations.

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Capability and capacity at UK ports: how will the International Health Regulations core capacity standards affect us

G Bickler, N Black

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Following the Port Health Review in 2006, steady progress has been made by the HPA to establish appropriate arrangements for health protection at ports and airports in England. However, the UK's port health is in an international context and we must be aware of what is happening internationally, especially in Europe. There is growing debate across

Europe as to what standards are appropriate for dealing with routine cross-border incidents as well as the major Public Health Emergencies of International Concern. This applies to all ports as well as the Designated Points of Entry. This may have an impact on what we will be expected to do in the future.

This presentation will give an update on where we are with establishing standards within England and in Europe, including the latest view from the European Port Health Workshop in February 2008 in London, hosted by the HPA.

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International Health Regulations; the Health Protection Agency experience in implementation

JA Jones

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Aims

The International Health Regulations (IHR) 2005 came into force in June 2007. They are an international instrument that is legally binding on all World Health Organization (WHO) Member States. They exist to prevent, protect against, control, and provide a public health response to, the international spread of disease while avoiding unnecessary interference with international traffic and trade. Member states are required to designate a National IHR Focal Point (NFP) to be accessible at all times for communications with the WHO. The NFP has a duty to both assess events that may be public health emergencies of international concern (PHEICs) and to notify them to WHO. The UK Government has designated the Health Protection Agency as the UK's NFP. This presentation outlines HPA progress with the UK NFP function and describes experience to date in communications with WHO.

Methods

A joint protocol has been developed between the Department of Health and the Agency for the assessment and reporting of potential PHEICs by the NFP and systems have been developed for handling information received from WHO.

Results

In the first six months after the IHR 2005 came into force the HPA reported two incidents to WHO under IHR, there was one report from another Member State to WHO about an incident linked to UK territory and the HPA was involved in communications with WHO about six other incidents that had implications for UK territory. In addition the HPA disseminated information within UK territory about 30 incidents highlighted by WHO.

Conclusions

Communications internally and with the WHO on IHR matters have so far proceeded satisfactorily but there is room for continued improvement. IHR implementation has been more resource intensive for the HPA than had been anticipated.

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PVL *Staphylococcus aureus* in Olympic wrestlers

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5 Salford Royal Hospital Trust

Introduction

In September 2007 a case of MSSA PVL was identified in a wrestler training with other elite athletes, at a local wrestling club. On investigation a Doctor at the Institute of Sport (EIS) reported an increase in skin infections over the last twelve months among the wrestlers.

Methods

An outbreak control team was convened including representatives from the Primary Care Trust, Health Protection Agency, Environmental Health

Department, Microbiologist, the Olympic Wrestling Association and the EIS. The investigations included:

- An environmental audit of the premises.
- Review of the laboratory results
- Case finding and collection of risk factor information via a questionnaire from wrestlers and coaches.

Results

19 wrestlers and coaches were interviewed and assessed. 11 of the athletes gave a history of skin infections over a 12-month period. Two were MSSA positive with the same sensitivities as the case, but were not tested for PVL.

Antibiotics were prescribed by the General practitioner or the EIS. In four cases antibiotics were obtained while the athletes were training abroad.

The questionnaire highlighted that the wrestlers were sharing gym equipment, personal clothing and razors. The environmental audit found inadequate laundering of clothing and lack of washing facilities.

Conclusion

All athletes and coaches were given information on personal hygiene and environmental cleaning, in conjunction with eradication treatment.

The incident identified the need for standards and procedures to prevent skin and soft tissue infections amongst athletes.

The following actions were taken:

- The development a wound assessment and treatment policy for the EIS and coaches working with the elite athletes
- The development of a leaflet and poster to increase awareness of skin infections and how to prevent them amongst all athletes.

Copies of the leaflet and poster will be brought to the conference.

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Notes

Poster Abstracts

Making Surveillance Work: What is the best way to count what counts?

A comparison of methods of surveillance for *S. aureus* bacteraemias in Wales

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Aims

Surveillance of *S. aureus* bacteraemias has been mandatory in Wales since 2001. This is implemented using a web-based data entry method. In 2006, mandatory surveillance of the top ten most frequently occurring bacteraemias in Welsh Trusts was introduced. This is carried out by electronic data extraction from laboratory information systems. *S. aureus* data is therefore reported from 2 different collection methods, providing a unique opportunity to compare data collection methods for National surveillance. The aim is to assess their relative merits.

Methods

Deduplicated (14 days) positive *S. aureus* blood cultures are entered quarterly by Trust staff into the web system. Centrally these data are aggregated and bed day denominator data used to generate Trust rates.

Top ten bacteraemia data are extracted electronically via a data warehouse system (Datastore), populated via Trust laboratory information systems. Datastore scripts routinely extract the results of positive blood cultures, using a series of rules to exclude probable contaminants and duplicate positives (14 days). The 10 most frequently occurring organisms are calculated and bed day denominator data is used to calculate rates.

Biannually an audit of the 2 schemes is carried out. Definite and probable matches of specimens between the two are identified. Where discrepancies occur, laboratories are asked to identify correct specimens and the appropriate data set is updated.

Results

Errors and omissions have been identified using both surveillance methodologies. Errors in the web system have generally been specimens not entered, typing errors (particularly MRSA and MSSA) and miscalculation of the 14 day rule. For the electronic extraction, errors have generally been due to duplicate entries from multiple patient identifiers and omissions because of network transmission errors.

Conclusions

Comparing the 2 data collection methods has identified inconsistencies in both. No surveillance can capture all data, however validation of these two methods will facilitate decision-making regarding future data collection.

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An audit of chronic hepatitis B follow-up - what should HPUs be doing?

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² Greater Manchester Health Protection Unit

Aims

The public health follow-up of patients with chronic hepatitis B is variable, at one Health Protection Unit within the North West it is usual practice for every newly diagnosed case to be visited, whereas in Greater Manchester no action is currently taken. In 2006 the Health Protection Agency published standards for local surveillance and follow-up of hepatitis B and C which included standards for the public health management of patients newly diagnosed with chronic hepatitis B. In 2007 Greater Manchester Health Protection Unit undertook an audit to see how far the current system of no specific action by the HPU meets the standards.

Methods

The HPA Laboratory in Manchester provided data on the 67 most recent patients diagnosed with chronic hepatitis B, excluding those diagnosed through antenatal screening. Patients were sent a postal questionnaire with information about hepatitis B. In particular we asked about whether the patient had been referred to a specialist, whether the patient had been given information about transmission of hepatitis B and whether contacts had been traced and offered vaccination where appropriate.

Results

Current addresses could only be confirmed for 28 patients. There were 12 responses. One patient came to the Health Protection Unit offices to complain about his information being disclosed to the HPA. The results showed that most patients were non-UK born and 50% had been referred for specialist care. Two patients were unaware of their diagnosis and four had known they had chronic hepatitis B for more than 5 years. 50% reported that close contacts had been offered hepatitis B vaccination.

Conclusions

The results and limitations of the audit are discussed along with the implications of the results for surveillance and follow-up of chronic hepatitis B by Health Protection Units.

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Enhanced surveillance of hepatitis B and C infection in high-risk groups: individual-level information for public health action

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In England and Wales, surveillance of hepatitis C (HCV) and hepatitis B (HBV) infection is carried out through routine and sentinel laboratory reporting. However, regional studies suggest the need for improving the timeliness and completeness of surveillance information for hepatitis, and providing detailed information on the burden of disease in specific at-risk populations. We describe two initiatives in 2008 in London and Brighton aimed at providing timely individual-level information on HBV and HCV infections in the antenatal and men who have sex with men (MSM) populations respectively, to better guide public health interventions and policy development.

Stakeholders involved since mid-2007 in protocol, proforma design and logistic issues included 4 genito-urinary medicine (GUM) and HIV clinic physicians for HCV, and 31 Antenatal screening co-ordinators (ASC) for HBV; Health Protection Agency (HPA) London region and Centre for Infection staff; and all four local hepatitis leads. Selected options for data submission are an electronic reporting system on the HPA secure document gateway or via a paper proforma. Data will be handled in accordance with Caldicott principles.

Both enhanced surveillance systems will be piloted within London Region (and in SE Region for HCV) beginning early 2008. ASC will report individual antenatal HBV diagnoses and GUM and HIV physicians will report newly acquired HCV diagnoses in MSM to the HPA. Ongoing monitoring will be used to improve performance of the pilot systems. A structured process evaluation against the specified objectives will be undertaken after six months, with a decision regarding possible continuation and national roll-out.

The piloting of two enhanced hepatitis B and C surveillance systems allowing collection of disaggregate data and developed with the participation of HPA and clinical stakeholders could be a good way to develop harm minimisation strategies and improve public health response to reported cases.

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HIV associated cancers in Scotland, 1981 – 2003

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Aims

The Scottish HIV register and the Scottish Cancer Registry were linked to determine the incidence of cancers in HIV infected persons and to see if it has changed since the introduction of Highly Active Antiretroviral Therapy (HAART) in 1996.

Methods

Probability linkage was used to link the two registers based on agreement between the common identifiers of date of birth, sex, initials and soundex code of surname. All cancers were counted provided they occurred after HIV diagnosis (or within two months of it). The observed number of cancers was compared with those expected based on sex-, age- and period-specific incidence rates for Scotland. The standardised incidence ratio (SIR) was defined as the ratio of the observed to the expected number of cancers.

Results

Over the whole time period there was a 4-5 fold increase in cancers among the heterosexual, injecting drug user and haemophiliac risk groups compared with the general population. This rose to an 11-fold increase among the homo/bisexual risk group.

The SIR for the pre-HAART era was 12.5 falling to 4.4 post-HAART. In both periods non-Hodgkin Lymphoma and Kaposi's sarcoma occurred most

often but the SIRs for both were lower post-HAART. Although the overall trend was for fewer cancers post-HAART the SIR for some cancers increased. In particular 8 cases of anal cancer occurred in the post-HAART period (SIR = 97.9) compared with no cases pre-HAART and 7 cases of Hodgkin's disease post-HAART (SIR = 15.9) compared to 4 cases pre-HAART (SIR = 6.9).

Conclusions

The risk of cancer has changed in this HIV-infected population in the post-HAART era. Most of the risks have fallen; exceptions are Hodgkin's disease and anal cancer both of which have risen.

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HIV prone occupational exposures: epidemiology and factors associated with initiation of post-exposure prophylaxis

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Aims

Occupational exposures to bloodborne viruses are very common. Whilst occupational HIV transmissions are rare, the serious physical, psychological and cost implications of potential transmission make this an important public health topic. European and UK guidelines recommend HIV post-exposure prophylaxis (PEP) as a valuable tool of preventing occupational HIV infection. Yet nearly a quarter of UK healthcare workers did not initiate PEP despite having been exposed to an HIV positive source patient. The aim of the study is to examine factors associated with PEP uptake behaviour.

Methods

The study is based on an analysis of the UK Health Protection Agency surveillance database of 'Significant Occupational Exposures to Bloodborne Viruses in Healthcare Workers'. Associations between possible predicting factors and PEP-uptake have been examined with univariate analysis and logistic regression modelling.

Results

Univariate analysis and logistic regression found significant associations between PEP-uptake and visible blood on the device ($p < 0.0001$) and a linear relationship with increasing injury depth ($p < 0.0001$). Doctors were significantly more likely to start PEP than nurses (OR 1.88, 1.16; 3.02). Multiple imputation of missing values did not significantly alter these results.

Conclusions

PEP-uptake was associated with known transmission risk factors, suggesting awareness of current guidelines. The significant differences in PEP-uptake across occupation categories may be due to differential risk perceptions or other underlying factors. This is the first study to examine PEP-uptake following occupational exposures to HIV. Further research and exploration of these findings are warranted, to understand the role of PEP-uptake behaviour in preventing occupational HIV transmission.

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Immunisation uptake in Ireland

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Vaccination is a safe and effective way of protecting people against harmful infectious diseases that can cause serious complications. The current Irish childhood immunisation schedule recommends that babies receive one dose of BCG vaccine at birth or by one month of age and three doses of vaccines against diphtheria, pertussis, tetanus, Haemophilus influenzae type b (Hib), polio and meningococcal given at two, four and six months of age. Between 12 and 15 months of age children should receive the first dose of MMR and a booster dose of Hib. To effectively control vaccine-preventable diseases it is recommended that at least 95% of children complete the childhood immunisation schedule.

Each HSE Area maintains an immunisation register and provides quarterly reports on immunisation uptake rates in their areas to the Health Protection Surveillance Centre (HPSC) on children 12 and 24 months of age. The HPSC collates the national immunisation uptake data. Quarterly reports of national immunisation uptake rates and rates by HSE Area are available since 2000.

The HSE Areas now also provide immunisation uptake rates by Local Health Office (LHO). Quarter 1 2007 was the first quarter that the immunisation uptake rates were published and mapped by LHO. These maps highlight LHOs that have achieved the target immunisation uptake rate of 95% and LHOs that fall short of this target. The target uptake is not being reached for childhood vaccines in the majority of LHOs in children 24 months of age.

Monitoring immunisation uptake and providing timely and user-friendly feedback to all involved in the vaccination programme is an integral part of any immunisation programme. Maps provide an easy way to assimilate and understand this information. Initial feedback from immunisation co-ordinators supports graphical imaging reports.

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MRSA weekly voluntary surveillance scheme London region, data 2000-2001

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Background

The importance of healthcare associated infections (HCAIs) as a cause of preventable illness and death has been recognised increasingly in recent years, and the prevention and control of these infections has become a priority. Surveillance or monitoring of these infections is key to their control. The voluntary weekly MRSA surveillance preceded the mandatory MRSA scheme.

Aims/Objectives

To describe the prevalence and incidence of MRSA infections from the hospitals who participated in the voluntary weekly MRSA surveillance and to summarise the key findings.

Methods

Laboratories completed a weekly return form which requested details on incident and prevalent colonisations, infections and other significant infections e.g. wound infection, in both hospital and community settings. Analysis has focused on 2000 and 2001 when the dataset is most complete.

Results

There was a 46 % increase in prevalent cases of hospital patients colonised with MRSA between 2000 and 2001. By comparison there was virtually no increase (0.9%) in incident cases of hospital patients colonised with MRSA. Data on place of acquisition of MRSA (colonisation or infection) were incomplete but indicated that majority of cases were acquired in hospital. Around two thirds of new cases of MRSA were colonisations, 5% were bacteraemias, and the remainder were other infections or unknowns. It will also consider the difficulties and issues associated with the implementation of weekly voluntary MRSA surveillance and the value of such a system.

Discussion/Conclusion

The weekly voluntary MRSA scheme showed that there was a large increase in prevalent cases in hospital patients particularly compared to incident cases. As expected most MRSA cases were in hospital patients and the majority were colonisations. Although this scheme has since been discontinued it gives an indication of the incidence and prevalence of MRSA and the relative contribution of colonisations and infections to the burden of MRSA in London.

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Surgical site infection surveillance in the Republic of Ireland: the Wexford General Hospital experience

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Surgical site infections (SSIs) are infections that occur at or near a surgical incision within 30 days of a procedure. Surgical site infection surveillance (SSIS) is a key outcome indicator after surgery. It has been estimated that a patient with an SSI requires an additional hospital stay of 6.5 days and hospital costs are doubled. (1) The HSE Infection Control Action Plan (2) states that explicit targets will be set for all hospitals in relation to surgical site infections.

SSIS is currently established in Northern Ireland, Scotland, Wales and England (Pan Celtic Collaborative Surveillance). SSIS is not established in the ROI with the exception of Wexford General Hospital (WGH) which began SSIS in August 2006. WGH is a district hospital with 283 beds, three surgical teams and a 5 bedded ICU.

Methods

- A Steering Group and several working groups were established: a project manager was appointed
- The existing validated questionnaire in use by the NI HISC was modified to include additional data on pathogens and antibiotic sensitivities
- Formic scanning software was purchased
- Staff educational sessions were held
- SSIS was piloted between Aug and Dec 2006: the program was established in Jan 2007. Nine surgical procedures were followed initially.

Results

The 2007 data will include description of the cohort, SSI rate, SSIs by procedure type, risk index for SSIs, pathogens isolated, time to develop SSI.

Conclusions

- SSIS at WGH provides detailed hospital specific feedback on SSI rates which is of value to patients, surgical and nursing staff and managers.
- The system follows the same methodology as the Pan Celtic group and collects additional microbiological data. Further data on prophylaxis and antibiotic treatment will be collected in 2008.
- A report on the implementation of SSIS at WGH is available.

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Surveillance of TB in Scotland: counting what counts at local level and predicting trends

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Introduction

The tuberculosis rate in Scotland has been static since 2000, but the hiatus in the previously declining rate has been overshadowed by the dramatic increase in the incidence of TB in other parts of the UK, notably London. However, in Edinburgh the TB service has become increasingly stretched as TB notifications have risen and complex cases have stretched the capacity of the service.

This presentation will examine whether the static numbers of annual TB notifications in Scotland masks important changes in local TB epidemiology that have implications for future TB trends.

Findings will be discussed in the context of the USA experience of TB surveillance and control.

Method

Local and national TB surveillance and demographic data were examined. UK and USA TB notification rates were compared.

Results

Whereas most other areas of Scotland had static numbers of notifications, the number of cases per year in NHS Lothian rose from 57 annually in 2000-2003 to 74 cases a year in 2004-2006. The proportion of foreign-born cases rose and routine surveillance did not easily capture increased case-complexity.

Since the early 1990s the USA has seen continuing declines in TB rates even in states like California where a third of the population is foreign born.

Conclusions

Since 2000 the UK has experienced the largest wave of European migration for 60 years. TB epidemiology in Edinburgh is changing in a similar way to other UK cities. Overall epidemiology in Scotland is not changing as rapidly as in Edinburgh, but the demographic drivers are in place for an upswing in TB cases across the whole of Scotland.

Case-complexity is hard to capture with current surveillance methods.

In the UK context, Scotland's TB incidence is seen as low and stable whereas in the USA, it would be seen as unacceptable and requiring investment in resources for TB control. Without investment in TB services now, TB rates in Scotland are likely to increase over the next five years.

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The implementation and ongoing development of the healthcare associated infection web-based data capture system in the Health Protection Agency, South East

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Background

The mandatory surveillance of MRSA bacteraemias by acute National Health Service (NHS) Hospital Trusts in England and Wales began in April 2001. Since surveillance began the Department of Health has implemented a number of interventions aimed at reducing the risk of patients acquiring a healthcare associated infection (HCAI). The results of a MRSA Bacteraemia Surveillance User Survey, developed by the Health Protection Agency, suggested that many Trusts would welcome changes to the existing scheme and that they were already collecting additional data, such as probable place of acquisition of infection.

Aim(s)/Objective(s)

The Health Protection Agency was asked to develop the HCAI web-based data capture system by the Department of Health.

Methods

The website was designed by colleagues at HPA Centre for Infections (Cfi), Colindale. HPA Regions were asked to pilot the enhanced MRSA web-based system with 2-3 Trusts within their regions before reporting via this route became mandatory in October 2005. Regional training workshops, organised in collaboration with HPA Cfi, enabled acute NHS Hospital Trust colleagues to have first hand experience of the new surveillance tool. A questionnaire was designed and used to assess the implementation of the web-based data capture system.

Results

5/24 acute NHS Trusts in HPA South East experienced initial local server difficulties. Now HPA South East has a 100% uptake of the enhanced surveillance system. The majority of Trusts feel they have benefited enormously and it has helped in the analysis of local data.

Discussion

The introduction of the HCAI web-base data capture system has improved routine reporting significantly and the majority of Trusts in HPA South East welcomed such an introduction. The new scheme enables Trusts to analyse their MRSA bacteraemias and cases of *C. difficile* in more detail and contribute to improving their knowledge regarding risk factors associated with such infections. The ongoing development of the web-based system led to the introduction of enhanced surveillance for *Clostridium difficile* in April 2007.

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The importance of measuring clinically relevant outcomes

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Aim

SISP monitors the use of single-use instruments for adenotonsillectomy in Wales to ensure patient safety is not compromised. The aim was to determine how verifiable and reliable postoperative bleeding was as an outcome to measure safety for surveillance purposes. Simple data collection by surgical teams is considered essential.

Methods

The current paper-based surveillance system was based on the audit established in Scotland and in England and Northern Ireland (National Prospective Tonsillectomy Audit). The dataset allowed for complication data to be captured up to 28 days after the original operation. Complication variables included minor bleeding (N1 and N2) not requiring surgical revision or major (R1 and R2) haemorrhage which require a return to theatre; in each case before or after 24 hrs following return to the ward. Data were compared annually (2003 – 2007).

Results

Haemorrhage as an outcome measure was easily obtained from data collected. However, only the return to theatre bleeds (R1 and R2) was deemed reliable. Above 80% data capture was obtained for total major haemorrhage and figures were comparable on an annual basis. Variability in the data captured for individual Trusts across Wales were noted for non-return to theatre complications (N1 and N2). This wide variability was noted by clinicians and attributed to differences in local practice.

Conclusions

Reporting of total major haemorrhage is an acceptable measure of a clinically relevant outcome and has been adopted for tonsillectomy surveillance in Wales. The verifiable data has been achieved through collaboration work with ENT surgeons by reaching an agreement on definitions and output. This surveillance scheme has thus highlighted the importance of a long term approach to determine suitable outcome measures and more importantly the need to investigate best practice to achieve reliable data.

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The rise and rise of ESBL's - where next?

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The presentation will examine figures from our CoSurv database in Northern Ireland and compare them with a study of nursing homes conducted by Dr Paul Rooney. Prospects for the future surveillance of these organisms would then be considered.

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Who's got syphilis in Wales?

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Surveillance of sexually-transmitted infections (STIs) is currently carried out in Wales using aggregate data reported by genitourinary (GUM) clinics on Welsh Assembly Government form KC60. However, these data are provided quarterly, usually three to six months after the end of the reporting quarter but occasionally much later. In addition, the dataset is of limited value, e.g. is not adequate to calculate rates of disease among the population below the national level, or is not flexible enough to adapt to emerging problems. Laboratory data on positive tests carried out for STI are currently available for surveillance purposes through CoSurv, but again lack demographic and clinical data. In addition their completeness is questionable.

A standardised database of reports (Microbiology Datastore) has been installed at each laboratory in Wales. Datastore is intended to store all the data normally present on a LIMS, including negative test results, and is updated during the day – typically at hourly intervals.

A project is underway by NPHS Wales Informatics to automatically collect data from GUM clinical systems and DataStore databases across Wales into a centralised database. The two datasets are to be then linked so that routine analysis can be undertaken, as well as ad-hoc reports, for dissemination of GUM and non-GUM data. The data will be finally held in the form of an OLAP cube to provide greater performance and ease of access to the data.

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Health Protection in Vulnerable People

A comparison of the epidemiology of tuberculosis between adults and children in London 2001-2006

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Aims

To describe the epidemiology of childhood TB in London, between 2001 and 2006, and compare it with that of adults.

Methods

Date source: new notifications to the Enhanced Tuberculosis Surveillance System between 2001 and 2006. Disease in adults and children were compared by: time, place of residence, personal characteristics and clinical features. Children were defined as under 15 years old.

Results

There were a total of 1,050 new cases of TB in children and 17,531 in adults. The rate in both groups rose during the study period, but more markedly in children post 2003.

The geographical distribution was similar, with foci in North London sectors. The majority of cases in both groups were of Black African and Indian Sub-Continent ethnicity.

Among children, 56% of cases were UK born, compared to 16% of adult cases. Almost two thirds of the cases in non-UK born children were from Sub-Saharan Africa, whereas in adults, this group comprised under 50%. Also, more children (80%) were diagnosed within five years of entry to the UK than adults (56%).

The site of disease was comparable, with pulmonary TB predominating. The proportion of cases that completed treatment was higher in children.

Conclusion

TB rates in children in London have increased in recent years. A large percentage of cases in children were born in the UK or had been in the UK longer than five years, therefore new entrant screening at port health cannot be relied upon to

identify these children. As TB in children indicates recent transmission, usually from an adult source, comprehensive screening of close contacts should follow new diagnoses. However, the majority of cases occur in minority ethnic populations; groups that often experience poorer health access and outcomes. Interventions targeting these groups to ensure early diagnosis and treatment completion are needed.

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An outbreak of measles in the travelling community in North Staffordshire

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Aims

At the end of 2007 nine confirmed measles cases occurred in travelling children living in North Staffordshire. The report summarises the outbreak investigation and raises the issue of impact of low uptake of MMR in vulnerable groups.

Methods

Outbreak investigation included: testing advice, microbiological analysis of clinical samples, contact tracing and implementing control measures

Results

The first confirmed case was reported following hospital admission and PCR testing of throat swabs. A second hospitalised case was later confirmed through PCR testing of blood. Molecular typing showed both cases were D4 genotype. No direct link was identified, but both were Travelling children and their families knew each other.

The index case anecdotally had come from South Yorkshire where a measles outbreak was ongoing.

Seven further cases developed subsequently. All had previously been identified as a contact of a known case and were offered MMR, which they declined.

One case was hospitalized. All were later confirmed using saliva specimens for IgM testing.

The hospital did not follow appropriate protocol for admission and isolation of patients with infectious diseases resulting in susceptible patients and staff being exposed. Immunity of 10 identified contacts in the hospital was assessed: HNIG was provided for two and early vaccination for three patients.

Conclusions

Travelling communities face significant health inequalities. This outbreak highlights issues regarding health protection in this vulnerable group and the wider community.

Staffordshire has a relatively high uptake of MMR. However, if those not vaccinated are concentrated in one community, this facilitates the occurrence of outbreaks.

Outbreaks in unvaccinated communities also put other susceptibles at risk. In this outbreak hospitalized susceptible children were exposed.

Targeted work is clearly needed to improve the uptake of MMR in the travelling community.

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Epidemiological investigation of an unusual outbreak of legionnaires' disease aboard a cruise ship

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Aims

To identify possible sources of exposure to legionella bacteria following an outbreak of legionnaires' disease aboard a cruise ship.

Methods

A postal questionnaire survey was undertaken of all 723 passengers on a cruise on which nine persons had confirmed legionnaires' disease (three by serology, three PCR, three culture). The questionnaire sought information about illness and movements/activities on and off the ship during the cruise. Univariate and multivariate (backward stepwise logistic regression) analyses were performed.

Results

Questionnaires were received from 634 passengers (88%); 167 reported illness (129 respiratory) either during, or soon after, the cruise. Responders' median age was 70 (range 11 to 97), 336 (53%) were female.

Seven confirmed cases were female, two were smokers, two ex-smokers. Confirmed cases occupied nine different cabins (three port side) on four different decks. None had used the sauna or spa pools. There was no off-ship excursion which all the confirmed cases had undertaken.

There were 43 suspected cases (passengers reporting respiratory illness and fever, chills or myalgia during or within ten days of the end of the cruise). After adjusting for age, sex and smoking, reporting 'mostly hot' or 'lukewarm' hot shower/bath water (as opposed to 'always hot') was the only exposure variable statistically significantly associated with being a suspected or confirmed case (odds ratio 2.17, $P=0.017$). Using the shower first also appeared to be associated with being a suspected or confirmed case with a dose-response relationship according to how often (test for trend, $P=0.033$). Female passengers were more likely to be suspected or confirmed cases (OR 1.72, $P=0.085$).

Conclusions

No evidence was found linking the cases with exposure in or around the spa pools or swimming pools or any other areas of the ship. There was some evidence implicating cabin showers particularly those in which the hot water was not always hot.

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Evaluation of a pandemic influenza infection control training film

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Aims

A multi-disciplinary group, in conjunction with a professional film producer, developed a training film on pandemic infection control. Films were developed for front-line workers in six specific settings— primary care, hospital, domiciliary care, residential care, prisons and funeral directors. The aim of the study was to assess the effectiveness of the training film, focussing particularly on acceptability, presentation, utility and changes of practice.

Methods

A questionnaire was developed and piloted to assess how widely the film had been used, and to test knowledge the views of those who had watched the film. The questionnaire was administered to two groups (i) groups of workers before and after watching the film and (ii) by post to a cross section of staff. Additionally thematic analysis using focus groups was undertaken.

Results

Care and social staff knowledge of appropriate infection control procedures needed during a pandemic showed a definite increase after watching the film. The focus groups indicated that staff believed the film was at the right educational level for training and it was a useful tool for pandemic planning. The evaluation highlighted a small number of issues in which there remained some confusion, in particular circumstances in which masks would not be required.

Some institutions did not have the appropriate media equipment to show the film.

There were differences in opinion across the conurbation as to when and how to use the film. Some managers felt that the film should only be viewed after an influenza pandemic had been declared. However the consensus of the focus groups was that the film should be watched before a pandemic.

Conclusions

This training film is an effective educational tool that is best used before a pandemic is declared. The study has highlighted a specific issue which requires additional attention during training.

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Health protection and child death - a new relationship

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Chapter 7 of Working Together to Safeguard Children (DH, 2006) sets out the procedures to be followed when a child dies. There are two interrelated processes for reviewing child deaths (either of which can trigger a serious case review):

- A rapid response by a group of key professionals who come together for the purpose of enquiring into and evaluating each unexpected death of a child.
- An overview of all child deaths (under 18 years) in the LSCB (Local Area Child Protection Board) area(s), undertaken by a panel. Child Death Overview Panels are responsible for reviewing information on all child deaths, and are accountable to the LSCB (Local Area Child Protection Board) Chair. Child Death Overview Panels may serve more than one LSCB. Child death review processes will become mandatory in April 2008. This poster will suggest how the Health Protection Agency at Divisional, Regional and Local level can be involved in the overview panels for child death management.

From the lessons learnt ultimately child deaths will be averted?

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Reptile associated salmonellosis: the need for public education

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Aim

To highlight the need for public education in relation to preventing reptile associated salmonellosis in vulnerable groups. This is prompted by recent cases of salmonellosis in the South East of Ireland in infants and children who had reptile contact.

Methods

Following the notification in September 2007 of salmonellosis in a three week old baby whose parents kept a pet snake, all cases of salmonellosis notified in the South East of Ireland from 2005 - 2007 were reviewed.

Environmental samples from the snake's cage were obtained for *Salmonella* testing in the September 2007 case.

Results

A total of 120 cases of salmonellosis were notified in the South East of Ireland between 2005 and 2007. Of these, there have been six episodes of salmonellosis (5%) in five individuals who had contact with reptiles. While the association were not definitively proven for any case, all cases were infected with serotypes previously associated with reptiles and all cases had a history of direct or indirect contact with reptiles. All six episodes occurred in children, ranging from three weeks to 15 years of age. Three episodes occurred in infants less than one year of age and four episodes resulted in illness severe enough to require hospitalisation.

Salmonella species were found on the environmental samples taken during investigation of the September 2007 case.

Conclusions

Keeping reptiles as pets is becoming more popular in Ireland. These recent salmonellosis cases emphasise the need for public education aimed at preventing reptile-acquired salmonellosis. Potential reptile owners, young reptile owners and

carers of young children who own reptiles should be particularly targeted. The CDC has published recommendations which include washing hands with soap and water after handling reptiles or their cages and keeping reptiles out of food preparation areas. It appears that similar guidelines are needed in Ireland.

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Tattoos on the cheap

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Background

In October 2006 Tameside Metropolitan Borough Council (MBC) received a complaint from a woman whose 16 year old daughter had had a tattoo at the home of an unregistered tattooist along with several friends. On inspection, the practices, premises and equipment were such that there was considered to be a significant risk of transmission of infection. A multi-agency incident team was convened to address:

- alerting those who had already had a tattoo and offering appropriate tests for blood borne viruses
- identification of other unregistered tattooists in the area
- advice to the public not to use unregistered practitioners
- specific concerns around young people using unregistered tattooists

Methods

The tattooist kept no records so the incident team did not know who had been tattooed or how many people were involved. A 'lookback' exercise was arranged using letters and the media to alert those who might have had a tattoo or piercing, with a help-line set up by the local Primary Care Trust (PCT). Letters were sent to the parents of 2500 children attending three secondary schools in the vicinity of the tattooist.

A press statement was released to local press then to regional press during the same week and there were radio and television interviews to publicise the help-line.

Results

Over 200 people telephoned the help-line and 181 were tested. Two people had evidence of past resolved hepatitis B infection. None tested positive for hepatitis C.

Conclusions

This incident posed challenges because it was not known beforehand how many people were involved and because many of those involved were children. The low number of positive results is discussed. In response to the incident Tameside MBC developed materials for a publicity campaign in schools and GP surgeries during 2007 in collaboration with the PCT and Health Protection Agency.

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purchased in Poland, as the most likely source of the outbreak. The product was not for sale in Ireland. All A & E consultants, ophthalmologists and general practitioners in the HSE Eastern area were alerted to the possibility of similar cases occurring in individuals entering Ireland from Poland.

This incident illustrated challenges for public health in controlling and managing uncommon infectious disease in migrant populations,

- language barriers in case detection and management,
- effective methods of alerting migrant populations to important public health messages
- knowledge of uncommon infectious diseases usually associated with foreign countries. (Two cases were the only trichinosis cases notified on the national reporting system CIDR).

One of the principal recommendations arising from this incident was ready access to verbal and written translator services within Population Health.

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Trichinosis in Ireland – public health lessons learned from management of outbreak in Dublin

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A Polish male, presented to A&E in a Dublin hospital, on 8th June 2007 with a history of fevers, periorbital swelling, conjunctival injection, myalgia and diarrhoea for the preceding ten days. He had been living in Ireland for the past year but had returned to North West Poland for holidays in April 2007. The patient indicated that an outbreak of trichinosis was ongoing in the region of Poland that he had visited. As a result of this and based on clinical presentation and characteristic laboratory results a presumptive diagnosis of trichinosis was made.

Following notification to the Department of Public Health, HSE East, case finding was instigated. One additional case of trichinella was diagnosed. Preliminary investigations, in conjunction with the Environmental Health Officers, indicated that sausages produced from uncooked pork meat,

Outbreaks and Incidents: Evidence or Intuition?

A large outbreak of *Salmonella* Enteritidis PT4

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Department of Public Health, HSE-South, Sarsfield House, Wilton, Cork, On behalf of the Outbreak Control Team

A large outbreak of *Salmonella* Enteritidis PT4 occurred in Kerry in July 2007. Early epidemiological evidence suggested a possible link to a bakery. Investigations included active case finding and interviewing of all cases identified, case control study, extensive food sampling and testing, inspection of premises, environmental sampling and trace-back of egg supplies.

In total 52 cases (41 microbiologically confirmed, 1 probable and 10 possible) were recorded over a four week period. The epidemic curve was consistent with a point source outbreak, with some secondary spread. 31% of cases were hospitalised and 50% of cases attended a GP. Seven case clusters were identified as being associated with the outbreak (one residential unit and 6 family groupings). 85% of cases were linked to a bakery, either directly or indirectly. The results of the case control study clearly indicated a strong statistical association between eating food from the bakery and/or eating food from outlets supplied by the bakery.

Inspection of the bakery premises revealed large numbers of pigeons and avian droppings adjacent to the bakery. Environmental samples (including avian droppings) were positive for *S. Enteritidis* PT4. One foodhandler was found to be *S. Enteritidis* positive, but with no reported history of gastrointestinal symptoms. A further foodhandler, with a history of diarrhoea, had a negative stool. An environmental risk assessment of the bakery identified deficiencies in the overall food safety management system including structure, operations, illness reporting, staff practices, zoning and cleaning.

It was not possible to conclude absolutely how *S. Enteritidis* was introduced into the bakery. The evidence would appear to support the introduction of *S. Enteritidis* by pigeons. However, introduction by an infected foodhandler cannot be ruled out. Once introduced, conditions and practices in the premises could have contributed to the spread of infection within the premises.

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A large swimming pool associated *Cryptosporidium* outbreak in Staffordshire

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1 HPA West Midlands

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3 NPHS Microbiology Swansea

Aims

To describe factors associated with an increase in *Cryptosporidium* incidence and public health actions taken to curtail ongoing transmission.

Method

Laboratory confirmed *Cryptosporidium* cases were interviewed and risk factors for transmission investigated. Species identification was undertaken on a subset of samples. Drinking water supplies were excluded as a source, and filtration systems at swimming pools inspected. The cooperation of general practitioners was important in case ascertainment and laboratory confirmation. Cases and their families were given prevention and hygiene advice by the health protection unit and the local authority environmental health officers.

Results

Thirty nine cases were identified with onset over a six week period in November/December 2007. Species identification was undertaken in 20 cases: 17 typed as *C. hominis* and 3 as *C. parvum*. The median age of cases was 13 years and the majority (70%) reside in one large town in Staffordshire. The only common risk factor for cases was swimming pool exposure. 54% of cases reported swimming in the two weeks before disease onset with 36% having visited one particularly large water theme park on one or more occasions. Inspection of these pools revealed failure of filtration systems at the theme park. Remedial action was recommended with particular emphasis on adequate depth of filtration systems and flow rates needed for extraction of oocysts. Secondary household transmission (not associated with swimming) was recorded in three families.

Conclusion

Although this descriptive study could not prove a causal association with swimming, appropriate and early public health action has most certainly contributed to the reduction of *Cryptosporidium* incidence to pre-outbreak levels.

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A patient notification exercise following infection control failures in a dental surgery

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- 3 National Public Health Service for Wales, Royal Alexandra Hospital, Dental Department, Marine Drive, Rhyl
- 4 National Public Health Service for Wales Microbiology Bangor, Ysbyty Gwynedd, Bangor

To investigate the association between treatment by a dental health care worker (HCW) and patient infection with a blood borne virus (BBV).

Design

Nested case control study

Setting

A patient notification exercise (PNE) arising from a hepatitis C virus positive HCW that was undertaken because of deficiencies in infection control practice.

Methods

Cases were individuals with a BBV infection identified as a result of the PNE. Controls were randomly selected individuals with negative tests for BBVs. Detailed information on dental treatment was obtained from patient notes. Information on risk factors for BBV infection was obtained using a structured questionnaire administered by telephone interview.

Results

Thirty patients had evidence of infection with a BBV. The mean number of visits for treatment was 20.5 in cases and 18.6 in controls, the difference 1.8 (95% CI -5.4 to 9.1) was not statistically significant ($p=0.62$). Transmission of hepatitis C in the dental setting was excluded by sequencing of the viral genome or establishing alternative risk factors.

Conclusion

There was no evidence of transmission of hepatitis C virus from the HCW to patients or transmission of a blood borne virus from patient to patient. To ensure consistent practice within the UK the National Institute for Health and Clinical Excellence should produce guidance on PNEs for the NHS.

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Advanced microbiological techniques aid the management of an outbreak of *E.coli* O157 at a seaside town

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Department of Public Health Medicine, HSE West (Donegal, Sligo, Leitrim Area)

Aim

To describe the management of an outbreak of *E.coli* O157 that occurred in August 2007 among visitors to a West of Ireland seaside town.

Methods

An Outbreak Control Team was established following the notification of two separate cases of *E.coli* O157. The two cases were not connected but they had stayed at the same seaside hotel. Inspection of the hotel kitchen revealed unsatisfactory work practices and a closing order was put in place. National alerts were issued and 4 further notifications of *E.coli* O157 cases were received over the next 4 days. Each of the 6 cases was fully investigated. Active case finding was instituted and resulted in contacts with over 730 people. Risk assessment was carried out on a wide range of possible sources and microbiological tests for *E.coli* O157 were carried out at the local hospital on 73 human faecal samples, 16 food samples, 34 water samples and 23 environmental samples.

Results

Of the 6 *E.coli* O157 cases, 4 were from Northern Ireland and 2 were from the Republic. One isolate was VT2 genotype. The other 5 isolates were VT1+VT2 genotype and 4 of these had identical PFGE patterns. All of these 4 cases had eaten at the hotel. The only identified environmental source of *E.coli* O157 was a river running onto the town's beach. The isolates from the river were all VT2 genotype and PGFE analysis demonstrated that these were not clonally related to any of the human cases.

There were no further cases subsequent to the institution of control measures in the hotel.

Conclusions

Advanced microbiological techniques helped considerably in determining the size of this outbreak and in guiding the appropriate investigative and control measures. All of the evidence indicated that the most likely cause of this outbreak was cross-contamination of foodstuffs in the hotel kitchen.

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Investigation of a case of congenital tuberculosis with contacts in multiple settings in Scotland

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Aim

To investigate and control transmission of tuberculosis (TB) among neonates, family members, close family contact and healthcare workers who were exposed to a 6-week-old premature infant diagnosed with congenital TB.

Methods

Contact investigation was carried out along the care pathway from where the baby was born at the Simpson Maternity unit in Edinburgh through the neonatal unit of the Royal Infirmary of Edinburgh and the intensive care unit at the Sick Children's Hospital in Edinburgh to Yorkhill Sick Children's Hospital in Glasgow where the diagnosis was made. Neonates, close family and household contacts and staff were identified as being potentially at risk basing

on TB characteristics of the mother; the exposure duration and presence of severe clinical condition or being immuno-compromised. Neonates who were identified as close contacts underwent clinical examination, Mantoux test and chest X-rays at six weeks from exposure. Adult contacts were screened by Mantoux test and chest X-ray.

Results

Eleven neonates, 3 staff, 4 household contacts, 4 close family contacts, 3 pregnant women in a four-bedded antenatal ward were identified as contacts and screened. Two of the 11 neonates had bronhopulmonary dysplasia and were started on Isoniazid chemoprophylaxis and reviewed with chest X-ray at three months. Out of the 25 contacts screened two adult had evidence TB and were started on treatment.

Conclusions

Evidence of outbreak and incident investigation in neonatal units, from other countries especially North America, show that large numbers of individuals are screened with no transmission found. The results of this investigation show that after exposure of a TB case to contacts in multiple settings, careful selection of contacts for screening can safely rule out transmission of the disease, save time and minimise stress.

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Is bloody diarrhea a marker of prolonged shedding in verocytotoxin-producing *Escherichia coli* O157 infection?

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Background

Guidelines in the United Kingdom on preventing person-to-person spread following gastrointestinal infections recommend exclusion of cases of verocytotoxin producing *Escherichia coli* (VTEC) O157, in a group posing a risk of further spread from work or school pending two consecutive negative faecal specimens. There is no general agreement, however, on how often faecal specimens should be collected for this purpose.

Methods

Systematic follow up of a cohort of 109 culture-confirmed cases identified in a large outbreak of VTEC O157 in South Wales, 2005. We computed Kaplan-Meier estimates for length of shedding, defined as the time interval from the date of onset of symptoms until the date of the first of two consecutive negative stool specimens. Length of shedding was also estimated in subgroups classified according to self-reported symptoms, and differences examined using the log rank test.

Results

VTEC O157 was isolated from 109 cases (median age: 6 years), 52 (48%) were male. Among the 90 (82%) symptomatic cases, 84 (93%) reported bloody diarrhea. Estimated median length of shedding for all cases was 30 days (inter quartile range: 18 to 47 days). Cases reporting bloody diarrhea shed significantly longer compared to those without (median 34 days v 28 days: $P = 0.0133$). Furthermore, symptomatic cases excreted significantly longer than asymptomatic cases (median 32 days v 28 days: $P = 0.0195$)

Conclusion and recommendations

Long duration of faecal shedding of VTEC O157, particularly in children, presents a considerable challenge for affected families, environmental health departments and laboratories alike. The presence of bloody diarrhea should alert health departments that longer periods of follow up are likely to be required.

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Research during outbreaks and incidents: soon, help may be at hand

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During the investigation of an outbreak there is an opportunity to improve our understanding by undertaking further investigations. However, with the advent of recent legislation such as the Human Tissue Act 2004 and developments in research governance there are stringent constraints in collecting clinical specimens during an outbreak, where the test results do not inform the clinical management of individual cases or contacts, management of the outbreak or for surveillance purposes. This is reflected in a lack of clarity around the legislative framework and research governance requirements for the investigation of outbreaks and incidents.

A lesson from the management of a cluster of pneumococcal pneumonia in 2006 identified the need for national guidance for these situations. We successfully gained funding to pursue this idea with a view to developing nationally agreed guidance. We are working with stakeholders in the HPA, Primary Care Trusts and Research Ethics Committees to construct a standard operating procedure to ensure that such investigations conform to RM&G requirements.

The first stage of our project developed ten scenarios where investigations are undertaken – both routine and less common events. For each scenario a description of the types of investigation that might be undertaken was given as well as highlighting potential issues faced in relation to research governance and ethics. A range of stakeholders have been asked to comment on the issues raised and this will be used to inform the next stages of the project. The next stage of the project is to develop a nationally agreed process to allow timely ethical opinion to be obtained and once guidance has been agreed, we will provide training to support its implementation.

This work is a good example of providing a solution to a problem faced by many of us working in health protection

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Responding to an outbreak of invasive group A *Streptococcus* in a care home in East Sussex

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- 3 East Sussex Hospitals NHS Trust, Eastbourne

Aims

To summarise the investigation and management of a cluster of cases of invasive Group A *Streptococcus* (GAS) in an EMI residential care home.

Methods

In April 2007 East Sussex HPU was notified that GAS had been isolated from the blood cultures of two patients from the same care home, one of whom died. Both isolates were serotype M-I T-I. Initial priorities were to assess the epidemiology, provide advice and assess the need for chemoprophylaxis. The home was visited to assess infection control measures, then chemoprophylaxis of 10 days of penicillin V was organised for all residents (24 females) and 30 staff. Twenty-five days after the first case a third lady from the care home was hospitalised and died. Blood cultures grew GAS serotype M-I T-I.

Results

The home was closed to admissions and a second inspection was carried out. Infection control training was provided. There was no evidence of spatial clustering of cases within the home. The third case had a wound that was being dressed by district nurses, and had been a 'wanderer' around the home.

Active case finding commenced. Throat and wound swabs were taken from residents with a skin lesion, members of staff who had close contact with the third case, and from any staff who had upper respiratory tract symptoms. The latter were excluded from work until their results were known. One resident had a positive result of GAS serotype M-I on throat swab. She had completed the course of penicillin V and was retreated with cephalexin 500mg TDS for 5 days. There have been no further cases reported.

Conclusions

Invasive GAS disease is increasing, and is a potentially serious problem in care homes, where outbreaks may go unnoticed. In this case an outbreak was detected early, however infection control measures and the use of mass chemoprophylaxis did not prevent a third case.

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Social networking software: a tool to help health protection teams use their intuitive skills more effectively and efficiently?

JMF Temple

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Background

Contact tracing during an outbreak gathers an overwhelming amount of data about individuals, which threaten the Outbreak Control Team with information overload. Instinctively and inevitably the OCT censor the data to remain in control.

During very large outbreaks or prolonged continuing outbreaks, this censoring of data may potentially hinder control.

It is suggested that social network mapping tools may help reduce this risk by displaying the links between individuals and places in an unbiased manner.

Methods

The contact data, collected by field health protection team members during outbreaks of Avian 'flu, HIV and TB in Wales, allowed the contact networks to be plotted using NetDraw (available from <http://www.analytictech.com/downloadnd.htm>).

Outcomes

In the first two outbreaks, the network diagrams encapsulate the network of contacts succinctly.

In the final outbreak the network diagram also allowed the team to identify possible links between two outbreaks with a common organism and investigate possible undiscovered links between them.

The presentation will display the networks and discuss the weaknesses and strengths demonstrated in the data that is normally collected.

Discussion

The advantages of this form of data collection and display for the HPT include evolutionary presentation of the data, external linkage to data from other sources such as laboratory reports. For those thinking about the theory of infection control such data would allow investigation of the factors aiding and hindering control of disease, enhanced information to plan preventative programmes, and a data base to help model future outbreaks of disease.

Conclusion

Network drawing tools can assist HPT's identify unexplored contact network areas in an evolving outbreak, so their time and efforts are evidence led. In due course it could help to further refine an evidence led infection prevention policy applicable to a small locality.

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The use of semi-automated tools to create maps and trend analyses during an outbreak of measles in Essex to aid incident management

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Essex Health Protection Unit

Aim

To demonstrate the value of regularly updated maps and trend analyses for the incident management of a measles outbreak in Essex, 2007.

Methods & Results

Trend analysis graphs for selected notifiable diseases, including data for the previous 10 years, are updated monthly for each of the counties in the East of England. These showed a sudden increase in measles cases in Essex which peaked in June and tailed off by December.

In addition to the trend analyses, cases are plotted on maps updated monthly. These can be displayed

in a loop to show the progress of an incident. The measles map of Essex showed a cluster of cases moving across the southern half of the county throughout the summer. This allowed the HPU to advise local Primary Care Trusts on which needed to take urgent action and which were likely to be at risk in the near future.

The regional map of measles cases for East of England allowed this outbreak to be considered in context as part of a larger one including neighbouring counties. It helped to clarify some of the likely routes of transmission and highlight where areas in the borders of Essex were likely to be affected.

Conclusion

In summary these maps and trend analyses, which are easily generated requiring no specific training, have been demonstrated to provide useful and timely information to help manage a measles outbreak.

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Wind in the valley: a large *Giardia* outbreak

Jane Reid, Judith Rushby, Dr Martin Schweiger

West Yorkshire HPU

Aims

An increase in the number of positive *Giardia lamblia* cases in one Bradford postcode prompted an investigation. Sporadic cases of *Giardia* are not unusual in the Bradford area; they are usually associated with travel amongst the diverse ethnic population.

Methods

Because *Giardia* is predominantly a water-borne parasite, Yorkshire Water was contacted. The reservoirs that supplied the area affected were tested and found negative for *Giardia*.

We spoke with the GP practices in the area and asked them to obtain samples from patients presenting with diarrhoea, abdominal pain or flatus of recent onset.

Local microbiology labs were advised of the observed increase in cases. All positive cases were investigated either by the HPA or Environmental Health Officers.

After some time it became apparent that a common link between the cases was eating at a particular Indian style restaurant. Food questionnaires were sent to all known cases together with asymptomatic diners who served as controls. Regular outbreak control meetings were held.

The environmental health officers of areas bordering on Bradford were also informed and asked to provide information about cases of *Giardia*.

Results

Two food handlers and 60 customers were identified with positive faecal samples making this one of the largest *Giardia* outbreaks recorded in the UK. No positive cases have occurred since the exclusion of the food handlers.

Conclusion

This was an unusual outbreak with many learning points. Prolonged incubation periods and failure to examine routine faecal samples for *Giardia* were significant problems. There is no currently accredited method for testing for *Giardia* in food.

Investigation of rising tide outbreaks of gastroenteric symptoms need to consider giardiasis.

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Late Breakers and Hot Topics

Can measles be diagnosed clinically?

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Background

With sub-optimum MMR vaccination coverage, measles has become a major public health problem in the UK. Laboratory tests which can confirm diagnosis are easily accessible but prompt public health action may need to be taken before results of laboratory tests are available. Careful clinical assessment may provide an important tool in recognising cases of measles in early stages of infection.

Aim

To investigate the predictive value of a clinical diagnosis of measles and of the report of Koplik's spots (KS) in particular in recognising of true cases of measles.

Methods

Retrospective analysis of 589 cases of suspected measles, reported to North West London HPU between 2005 and 2008.

Results

Of the 589 cases of suspected measles, 158 were confirmed. KS were mentioned in only 28/589 (4.8%) cases. In 18/28 (64.3%) patients, the reporter has seen KP on the oral mucosa. KS were reported not to have been seen in 10/28 (35.7%) cases. Laboratory tests confirmed acute measles infection in 12/18 (66.7%) patients within the group with KS and in 3/10 (30%) patients within the group where KS were not seen. In 6/18 (33.3%) patients with KS seen and in 7/10 (70%) where KS were not noticed, measles was not confirmed. KS specificity within investigated group was 53.8%, sensitivity 80% and positive predictive value 66.7%.

Conclusion

KS are described by the medical literature as pathognomonic for measles diagnosis. Its report has been of little value in the investigated group. Also KS were described as the part of the illness picture in not a measles cases. The knowledge

about KS among the doctors may need to be increased or reviewed. It becomes more important for public health, when quick and accurate diagnosis is crucial for initiating further actions.

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Liberty and consent versus community benefit and protection of vulnerable groups

J Trusler

Nuffield Council on Bioethics

Aim

To identify and consider ethical and social issues in public health, using the example of infectious diseases. The focus here is on reconciling consent and civil liberty concerns with community benefit and the protection of vulnerable groups.

Methods

The Nuffield Council on Bioethics set up an interdisciplinary Working Party in February 2006. The group held a public consultation, met with stakeholders and, in November 2007, published its report and recommendations.

Results and Conclusions

The state has a duty to reduce inequalities and to help people lead a healthy life. A 'stewardship model' is set out, outlining how this can be justified and achieved. The 'intervention ladder' is a tool for assessing the acceptability of different public health measures. Together, they provide a framework for consideration of the ethical and policy issues. Four case studies illustrate the application of the framework: obesity, alcohol and smoking, water fluoridation, and infectious disease.

Prevention, surveillance and control of infectious diseases: The principal ethical issue is that of reconciling consent and civil liberty with community benefit. We concluded that restriction of civil liberties may be justified in some circumstances, particularly when the potential harms to others

are substantial (e.g., isolation or quarantine/serious communicable diseases). Individual consent might be less relevant where the risks to the individual are minimal (e.g., using anonymised data or samples for surveillance). Vaccination policy: in general, voluntary vaccine programmes should be preferred, but more coercive policies might be acceptable in some circumstances.

International context: A discussion of pandemics considered vulnerability in an international perspective. Specific recommendations related to: the infrastructure and capacity required for the sharing of pandemic-relevant information with WHO surveillance systems; and intellectual property and access issues arising in the context of the recent controversy about Indonesia's refusal to share influenza virus isolates as part of international surveillance.

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Tackling inequalities in health protection of vulnerable groups: The Manchester Blood Borne Virus Research Partnership

A Verma¹, E Duffell², W Morton¹, K Harrison¹, J Burton¹, L Patterson¹, T Millar¹, F Reynolds², D Carr³, C Tyrrie⁴, J Mantle⁴, I Deasha⁵, C Ciliento⁵ on behalf of the Manchester Blood Borne Virus Steering Group

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- 2 Greater Manchester Health Protection Unit, Salford
- 3 Shared Care Services, Greater Manchester West Mental Health NHS Foundation Trust, Manchester
- 4 Manchester Primary Care Trust, Manchester
- 5 Manchester Drug and Alcohol Strategy Team, Manchester City Council, Manchester

In health protection, multi-agency partnership working is essential but becomes vital when dealing with vulnerable groups such as intravenous drug users, homeless people, prisoners, immigrants and asylum seekers. This is particularly true for blood borne viruses (BBV) including human immunodeficiency virus (HIV), hepatitis B and hepatitis C which affect many vulnerable groups

The prevalence of BBV within the Manchester urban area is estimated to be considerably above the national average and continues to rise. This increase is partly explained by the large numbers of people in the high risk groups for BBV, particularly intravenous drug users. In addition to the difficulties

common to all individuals with BBV infection such as stigmatisation, individuals from vulnerable groups diagnosed with a BBV often face additional problems such as access to care, acceptance onto treatment programmes and problematic follow-up arrangements. Dual diagnoses with other infections and mental health illnesses are also of concern.

BBV Research Team (BBVRT) is a multiagency partnership created to address these issues by undertaking an epidemiological healthcare needs assessment at local authority level. It incorporates an evidence-based systematic methodology to map and evaluate the prevention services available including a gap analysis. The work is hypothesis-generating and will facilitate research into BBV and how to address the inequalities in healthcare.

The multiagency partnership work is essential to provide comprehensive mapping of all services and identify health needs in order to reduce inequalities and improve health outcomes. Our long-term aim is to reduce the incidence of BBV infection across Manchester.

The BBVRT has successfully recruited a number of local, national and international experts in this field to help with the work for the benefit of the local population. By ensuring generalisability, other populations outside of Manchester will benefit from our work.

Contact: arpana.verma@manchester.ac.uk

Speakers and Chairpersons

Ike Anya

Ike Anya is a Specialist Registrar in Public Health Medicine in his final year of training at the Health Protection Agency South West. He is leading on a regional project to improve sexual health and blood-borne virus services in prisons in the South West. He has taught on courses at the London School of Hygiene, Bristol University and UCL and his work and research interests are in migration and health and the health of vulnerable and marginalized populations

Nicol Black

Nicol is a Consultant in Communicable Disease Control (CCDC) with the Health Protection Agency. He is the Local and Regional Services Division project manager for the Port Health Review. His current role is to coordinate turning policy into operational practicality.

Previously, he was a district CCDC in the North-East of England. In the past he has been a submariner in the Royal Navy, a Principal in General Practice, a Primary Care Consultant in Saudi Arabia, a Lecturer in Medical Education at the University of Dundee and the Northern Region Consultant in Communicable Disease Control.

His special interests include surveillance, especially the early detection of emerging foci of infectious disease, teaching outbreak investigation, risk assessment and tuberculosis.

He still practises as a ship's doctor from time to time.

Sarah Brill

Sarah Brill is a Registered Nurse, BSc (Hons) Studies in Community Nursing and has a background in School Nursing and is currently a Communicable Disease Control Nurse.

In 1999 she started work in the field of infection prevention and control completing a BSc Infection Control in 2001.

Since joining the HPA in 2003 she has continued to maintain an interest in residential healthcare and actively promotes awareness of the need for good practice to prevent and control the spread of infection.

Gillian Brown

Gillian Brown has worked in the field of communicable disease control/health protection for the last 12 years. She is currently Nurse Consultant for the Norfolk, Suffolk and Cambridgeshire HPU which has been involved in three avian influenza outbreaks in the last two years.

Rachel Chalmers

Rachel has been the Head of the *Cryptosporidium* Reference Unit since 2000. Service provision of the Unit includes laboratory confirmation and typing, support of outbreak investigations, risk assessment and control of disease transmission. Current research includes molecular epidemiology of cryptosporidiosis, methods for the detection and subtyping of protozoan parasites in food, water and environmental matrices, sero-epidemiological studies and identifying risk factors for infection. The Unit are actively seeking solutions to the problems in the diagnosis and management of cryptosporidiosis in profoundly immunocompromised patients through funded research.

Sandra Cohuet

Since the beginning of her career as a medical doctor, Sandra has been interested in public health and field epidemiology. She worked as a medical epidemiologist at Epicentre, a non-profit organisation created by Médecins Sans Frontières (MSF) involved in operational research and field epidemiology in developing countries. Through this job, she organised and conducted studies in the field in various settings in Sudan, Chad, Angola and the Democratic Republic of Congo. In 2005-2006, she was a student of the Master's degree in Control of Infectious Diseases at the London School of Hygiene and Tropical Medicine. She is now a fellow of the European Programme for Intervention Epidemiology Training (EPIET) based at the Health Protection Agency London region.

Denis Coulombier

Denis Coulombier is the Head of the Unit for Preparedness and Response in the European Centre for Disease Prevention and Control since its establishment in 2005. Trained as a tropical disease

specialist in France, he started his professional career as a clinician in various international settings in the Pacific region, the Indian Ocean and in Africa. After one year with Médecins Sans Frontière, he joined the Epidemic intelligence Service in the US CDC in 1991. In 1995, he returned to the newly created Institute for Public Health Surveillance in France to coordinate the surveillance system for diseases under mandatory notification. In 2001, he started the Epidemiology Strengthening Team in the WHO office in Lyon France

John Cowden

John Cowden qualified from Sheffield University in 1977. He entered public health in 1981, and joined the Communicable Disease Surveillance Centre of the Public Health Laboratory Service in 1985, where he was appointed the first consultant in charge of the newly formed Gastrointestinal Diseases Section in 1989. He was appointed Consultant Epidemiologist at Health Protection Scotland (formally the Scottish Centre for Infection and Environmental Health) in 1995. Since 1995 he has been the consultant epidemiologist responsible for national surveillance of, and operational support for, infectious intestinal diseases (IID).

Elizabeth Cullen

Dr Elizabeth Cullen qualified in medicine from University College Dublin in 1982. She has a long standing interest in the impacts of the social and physical environment on health, and has published her findings on adverse health impacts of the 'Celtic tiger' in the Feasta Review. She is currently completing a Ph. D. on the impacts of climate change on health in Ireland and hopes to pursue her interest in the impacts of environmental influences on health in the

Irish context in the future. She is a member of the Advisory Committee of the Eastern River Basin District under the Water Framework Directive.

Helen Davison

Helen is a Specialist Registrar in Public Health on the North West Public Health Training Scheme and is currently based at Cumbria PCT. At the time of her involvement with the outbreak she is discussing she was working at the Cumbria and Lancashire Health Protection Unit.

Diane Fiefield

Diane started nursing in 1984 and since qualifying she has been in various posts, mainly respiratory medicine. In 2003, having walked the streets as a TB nurse for some years, she joined the HPA and is currently working at Greater Manchester Health Protection Unit.

Kirsty Foster

After medical training in London, Kirsty moved to the North East where she trained in Public Health Medicine. She joined the HPA in 2005 as a Consultant in Health Protection. Her interests include risk perception and communication, sexual health and public health training.

Andrew Grant

Andrew Grant has degrees in mathematics and statistics, from London and Brunel universities. He has worked in manufacturing industry as a programmer and systems analyst; and since 1988 at PHLS, now HPA, as a statistician. His present interests include capture-recapture methods, the statistics of data processing, modeling microbial evolution, and statistical epidemiology.

Wendy Harrison

Wendy is a Senior Scientist (Epidemiology) within the Welsh Healthcare Associated Infection Programme (WHAIP). In particular she provides the lead on surgical site infection surveillance post Caesarean section surgery and ICU surveillance in Wales. Wendy is also the programme manager for the Surgical Instrument Surveillance Programme (SISP) which is currently responsible for the surveillance of the single-use adenotonsillectomy instruments utilised in Wales.

Cathy Johnman

Dr Cathy Johnman is an SpR in Public health in NHS Greater Glasgow and Clyde. She is a locally born medical graduate of the University of Glasgow (MBCbB, 1995) and trained in General Practice in the Lake District (GP Vocational training 2001) and Sexual and Reproductive Health Care at the Sandyford Initiative in Glasgow (MFFP, 2005). Leaving the sex behind her (but not with full abstinence) she moved to Public Health in 2006.

Her main interests are in carrying out high quality research, to inform Public Health Practice and Policy. This piece of work was carried out for her MPH thesis (MPH with distinction 2007)

Jane Jones

Jane Jones is a consultant epidemiologist in travel and migrant health at the Centre for Infections. She has a scientific background in biochemistry and immunology and a medical background in general practice both in the UK and Australia. She has worked in public health issues around tuberculosis at local, regional, and national levels and has also been active in general public health working with refugees in London. She set up the Travel and Migrant Health Section at the Centre for Infections and is the HPA lead for the International Health Regulations. She has a particular professional interest in the socio-economic determinants of infectious disease and global infectious disease epidemiology, and personal interests in travel and anthropology.

Jim Kiely

Dr Kiely has been Chief Medical Officer of the Department of Health and Children since 1997 having previously been Deputy CMO.

As CMO, Dr Kiely has been involved in a number of initiatives relating to various aspects of health policy such as Hanly Committee, was on the Steering Group which oversaw the preparation of the Health Strategy, and chaired the Reform Programme Action Project on the establishment of the Health Information and Quality Authority.

1999 saw the publication of the first Chief Medical Officer's Report on the state of the health of the population, and a number of subsequent reports have dealt with issues such as Children's Health and Better Health Through Prevention.

Currently, Dr Kiely's main areas of activity are in Pandemic Influenza Planning, Vaccination Policy and Healthcare Associated Infections.

At international level, Dr Kiely has represented the Department on a number of WHO, EU and Council of Europe committees. He chaired Committee A of the World Health Assembly in 2002 and was Executive President of the Euro Regional Committee in 2001. Since its establishment in 1999, Dr Kiely has been co-chair of the Ireland/NCI Cancer Consortium.

Suzi Lyons

Dr Lyons is the senior researcher of Alcohol and Drug Research Unit, in the Health Research Board, Ireland, since October 2007. She is an alumni of EPIET (European Programme of Intervention Epidemiology Training [2006]). Previously she worked in the World Health Organization. She has a MSc in Community Health from TCD and a PhD in Public Health and Epidemiology from UCD (2004).

Marian McEvoy

Since 2006, Dr Marian McEvoy has worked as director of the Bedfordshire and Hertfordshire Health Protection Unit. Prior to that time she was consultant in communicable disease control in Hertfordshire and London, regional epidemiologist in North Thames and consultant epidemiologist in the PHLS

Paul McKeown

Specialist in Public Health Medicine, HSE – Health Protection Surveillance Centre, Dublin.

Dilys Morgan

Dilys is head of the Emerging Infections and Zoonoses Department at the Health Protection Agency Centre for Infections, Colindale, London. Responsibilities include: developing the Emerging Infections portfolio at the Centre for Infections, coordinating zoonoses work across the Agency and providing scientific support to the Chief Medical Officer's National Expert Panel on New and Emerging Infections. She also contributes to the HPA bioterrorism response, including being in charge of the HPA Deliberate Release Website.

Sue O'Connell

Sue O'Connell is consultant microbiologist at the HPA Microbiology laboratory, Southampton, and is Head of the HPA's Lyme Borreliosis Unit. She works closely with groups in Europe and North America on clinical, diagnostic and epidemiological aspects of tickborne diseases and other zoonoses.

Margaret O'Sullivan

Dr Margaret B O' Sullivan MB MPH FFPHMI qualified in medicine from University College Cork. She is a Consultant in Public Health Medicine with the Department of Public Health, Health Service Executive (HSE-South) and is based in Cork.

Her health protection brief includes the surveillance and control of gastrointestinal infections, zoonotic infections and tuberculosis. She is chair of the National Zoonoses Committee and chair of the TB Screening Subgroup of the National TB Advisory Committee.

Helen Park

Helen is an SpR in Public Health and is presenting work undertaken whilst recently working at the North East Health Protection Unit in the North East of England. Prior to work in Health Protection, Helen has trained in PCTs in the North of England. Before starting training in Public Health, Helen completed an MD in geriatrics.

Shantini Paranjothy

Shantini is a Specialist Registrar in Public Health with the National Public Health Service for Wales. In January 2007, she was appointed as a Walport Clinical Lecturer in Public Health Medicine, based at the Department of Primary Care and Public Health, Cardiff University.

Donald Read

Donald came to public health from background of working as a community worker, primarily with young people on youth work projects including sexual health, men's health, drugs and alcohol and street based work. After several years working in the capacity of public health development specialist with North Lancashire PCT, Donald joined the Public Health Specialist training programme and is currently enjoying working on diverse projects on both a local and regional level. Donald's research interests include social aspects of health and well being, lay understandings of health, and participatory research for health. Donald wishes he owned a dog...but doesn't.

Fiona Reynolds

Fiona Reynolds was once Barbara Cartland's body-double – an incident that convinced her that journalism perhaps wasn't the career for her after all. She spent several years working as a Health Promotion Specialist, in sexual health and teenage pregnancy in Yorkshire and then Lancashire, and joined the Northwest Public Health Training Programme in 2004. Her favourite colour is not pink.

Iain Roddick

Iain is currently the Regional Information Manager for the HPA East of England Regional Epidemiology Unit and previously worked for the London regional unit starting in 1999. Before this he studied Chemical Physics at the University of Glasgow and did postgraduate research on Drug Metabolism using Computational Chemistry in London. He is currently interested in using modern database and web technologies to get the most out of routine surveillance data.

Joyshri Sarangi

Consultant in Communicable Disease Control and Director of Avon, Gloucestershire and Wiltshire Health Protection Unit.

Charles Saunders

Consultant in Public Health Medicine (Communicable Disease & Environmental Health) at Fife NHS Board since 1995. Former Chairman Scottish Consultants in Public Health Medicine (CD&EH) Group.

Josie Smith

Josie Smith is currently working as a Research Scientist in the National Public Health Service for Wales. Her primary research focuses on blood borne viruses, specifically hepatitis C and HIV, and substance misuse. With a background in psychology, her research encompasses epidemiological, public health and psychological perspectives.

Daniel Thomas

After graduating in biological sciences from Imperial College, London, Daniel worked for MAFF (now DEFRA) before completing a PhD in veterinary epidemiology.

Daniel joined PHLs Communicable Disease Surveillance Centre in 1991 to work on the epidemiology of zoonoses. Daniel has continued to specialise in public health surveillance and applied epidemiology but has broadened his interests from zoonoses to include other community acquired infections. Daniel is currently Head of Surveillance at National Public Health Service for Wales.

Mark Thomas

Mark obtained his degree in Microbiology in 1984 from the University of Wales, Aberystwyth and joined the Public Health Laboratory Service in 1985. He gained his fellowship in Biomedical Sciences in 1988 followed by a Masters in Computing from the University of Wales, Cardiff in 1992. He has many years of experience in clinical microbiology including active involvement in the introduction, configuration and management of laboratory information management systems, and the development of laboratory applications. Mark joined NPHS Informatics in 2000 where he is currently a Technical Consultant in Laboratory Systems.

Caron Walker

Caron Walker is a final year Public Health Specialty Registrar and is currently working between the Health Protection Agency and Newcastle University. Her recent work has considered the links between tuberculosis and diabetes and she is also working on developing a national framework for research to assist during outbreaks and incidents. Her other interests include prison health and international public health.

Deborah Wilson

Deb Wilson trained in medicine at the University of Newcastle upon Tyne. After developing an interest in the fields of infectious diseases and microbiology she undertook specialist training in Public Health Medicine. Deb was appointed as a Consultant in Communicable Disease Control in 1998 and subsequently transferred to the Health Protection Agency. Her interests include surveillance, risk perception/communication, GI infections, prisons and bloodborne viruses.



Notes
