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We would like to acknowledge the generous sponsorship received from Wyeth Vaccines, Sanofi Pasteur MSD and *safefood* who have contributed to the administration costs of this conference.





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 Conference has been approved for CPD (CME) credits by the Faculty of Public Health Medicine as follows:

| | | |
|---------|-------------|-----------|
| Tuesday | 23 May 2006 | 5 Credits |
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| Wednesday | 24 May 2006 | 5 Credits |
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Five Nations Health Protection Conference

Tuesday, 23 May - Wednesday, 24 May 2006

Posters displayed throughout Conference

Tuesday, 23 May 2006

09.30

Registration starts

10.45 - 11.00

Welcome and Introduction

Meirion Evans

11.00 - 12.00

Keynote address
Preparing for the influenza Pandemic

Jonathan Van Tam
Jim McMenamin

SESSION I

Sexual Health Chair: Joyshri Sarangi

12.00 - 12.04

Chairperson comments

Joyshri Sarangi

12.04 - 12.18

Progressing towards national coverage: an update on the phased implementation of the National Chlamydia Screening Programme (NCSP) in England
Discussion

Lynsey Emmet

12.18 - 12.32

Community syphilis screening pilot in gay saunas using near patient testing
Discussion

Lorraine Lighton

12.32 - 12.46

The late diagnosis and consequent short-term mortality of HIV-infected heterosexuals (England and Wales, 2000-2004)
Discussion

Tim Chadborn

12.46 - 13.00

Antenatal HIV, hepatitis B and syphilis: geographical inequalities in screening for infection and in prevalence amongst pregnant women in London, 2000-2004
Discussion

Isabelle Giraudon

13.00 - 14.00

Lunch



Notes

Tuesday, 23 May 2006 (continued)

SESSION II

| Outbreak and Incident Management | | |
|---|---|--------------------------------|
| Chair: Roland Salmon | | |
| 14.00 - 15.00 | VT + <i>Escherichia coli</i> O157 in Wales | Guest speaker Roland Salmon |
| 15.00 - 15.15 | When meningococcal disease comes to stay – the pragmatic management of a Worcestershire school cluster Discussion | Ashis Banerjee |
| 15.15 - 15.30 | A national response to a local incident: A case of hepatitis B reactivation in a Dublin dialysis unit Discussion | Fidelma Fitzpatrick |
| 15.30 - 15.45 | Hepatitis C – a lookback and patient notification exercise. Challenges for a local Health Protection Unit and issues for patient safety Discussion | Mamoona Tahir |
| 15.45 - 16.00 | The occurrence of a sporadic case of imported rabies Discussion | Aiden Kirkpatrick |

16.00 - 16.30 Tea

| Immunisation | | |
|--------------------------------|---|------------------------------------|
| Chair: Richard Smithson | | |
| 16.30 - 16.50 | Changes in the childhood vaccination programme Rational for the new vaccination schedule Discussion | Guest speaker Natasha Crowcroft |
| 16.50 - 17.00 | Protecting contacts of hepatitis A; What is the difference between vaccine and human normal immunoglobulin? | Natasha Crowcroft |
| 17.00 - 17.10 | Hepatitis A: What is the impact of guidelines on health protection practice? | Suzanna Mathew |
| 17.10 - 17.15 | Joint discussion | |
| 17.15 - 17.30 | Outcome of infectious disease screening of asylum seekers to Cork City 2002-4 Discussion | Maeve Burke |
| 17.30 - 18.30 | Public Health Medicine Environmental Group Annual General Meeting | |

18.30 - 19.00 Wine and Nibbles

| | | |
|-------|--|-------------|
| 19.00 | Debate "This house believes that, in the context of health protection, individuals should never be put at immediate risk in order to reduce potential future risk to the population: the individual's rights outweigh those of the population." | John Cowden |
|-------|--|-------------|

20.00 Course Dinner



Notes

Wednesday, 24 May 2006

SESSION III

9.00 - 9.15

Surveillance

Chair: Meirion Evans

Description of a collaborative project to provide timely primary care-derived data for health protection surveillance at SHA level across the UK

Sally Harcourt

9.15 - 9.30

Incidents and outbreaks of tuberculosis in England and Wales

Charlotte Anderson

9.30 - 9.45

Enhanced Surveillance of Haemolytic Uraemic Syndrome (ENSHURE) and other thrombotic microangiopathies in Scotland

Kevin Pollock

9.45 - 10.00

Enhanced prospective surveillance of extended-spectrum β -lactamase (ESBL)-producing organisms in London and South East England

Louise Bishop

10.00 - 10.15

Surveillance of Surgical Site Infection (SSI) of orthopaedic procedures in Scotland, Wales and Northern Ireland: Pan Celtic Data 2004

Ed Smyth

10.15 - 10.30

Trends in uptake of voluntary confidential testing for HIV and hepatitis C among injecting drug users in the UK: implications for prevention

Fortune Ncube

10.30 - 11.00

Coffee

11.00 - 11.15

Gastro-intestinal Infections and Zoonoses

Chair: Clíodhna Foley-Nolan

Lyme borreliosis in England and Wales, 1997-2005
Questions and Answers

Robert Smith

11.15 - 11.30

Shigellosis: national outbreak of shigellosis presenting as a local outbreak in a nursery
Questions and Answers

Peter Sheridan

11.30 - 11.45

VTEC outbreak in Mid-West Ireland
Questions and Answers

Rose Fitzgerald

11.45 - 12.00

Risk factors for secondary transmission to household-contacts in a large VTEC O157 outbreak in South Wales, 2005
Questions and Answers

Dirk Werber

12.00 - 12.15

An outbreak of cryptosporidiosis in North West Wales, UK
Questions and Answers

Dolors Carnicer-Pont

12.15 - 12.30

Round Table Session
Lessons learned, similarities, differences, country issues

All presenters

12.30 - 13.30

Lunch



Notes

Wednesday, 24 May 2006 (continued)

SESSION IV

13.30 - 13.48

Late Breaker / Hot Topics
Chair: Dilys Morgan

The role of local HPUs in the major incident at the Buncefield Oil Terminal, Sunday 11th December 2005
Discussions

Marian McEvoy

13.48 - 14.06

Evaluation of HCV opportunistic screening among general practice attendees
Discussion

Eleanor Anderson

14.06 - 14.24

From incident management to prevention – piloting a mercury amnesty
Discussion

David Forster

14.24 - 14.42

Malaria cases in travellers returning from The Gambia: case series
Discussion

Peter Chiodini

14.42 - 15.00

Section 37/38 in TB: some logistical difficulties and ethical issues
Discussion

Margie Meltzer

Close of Conference



Notes

Presentation Abstracts

Tuesday 23 May 2006

SESSION I

Sexual Health

Progressing towards national coverage: an update on the phased implementation of the National Chlamydia Screening Programme (NCSP) in England

L Emmett¹, A Talebi¹, J Clarke², S Randall^{1,3}, T Battison^{1,3} and V Delpech¹, on behalf of the NCSP Advisory Group

- 1 Health Protection Agency Centre for Infections, HIV & STI Department, 61 Colindale Avenue, London NW9 5EQ, United Kingdom
- 2 Interim chair, National Chlamydia Screening Steering Group, Department of GU Medicine, Sunnybank Wing, Leeds General Infirmary, Great George Street, Leeds, LS1 3EX, United Kingdom
- 3 Department of Health, National Programme Delivery – Sexual Health, Wellington House, 133-155 Waterloo Road, London, SE1 8UG, United Kingdom

Aim

To present findings of the first three years of the NCSP implementation in England. The programme aims to control chlamydia through the early detection and treatment of asymptomatic infection to prevent the development of sequelae and to reduce onward transmission.

Methods

The NCSP began in 10 programme areas in April 2003 and was extended to cover 26 areas in April 2004, covering over 25% of all primary care trusts in England. The programme offers screening to all sexually active people aged less than 25 years in a variety of settings outside genitourinary medicine (GUM) clinics. Urine or self collected vaginal swab samples, are tested by nucleic acid amplification. Treatment, partner notification and follow up services are provided predominantly by community based services. Data collected through local Chlamydia Screening Offices are analysed at the HPA's Centre for Infections at Colindale.

Results

Between April 2003 and September 2005, over 127,000 (13% men) opportunistic screens were conducted in the target age-group. Tests were performed in approximately 20 different settings, with the majority at community contraceptive services (48%), youth clinics

(20%) and general practices (11%). Testing volume increased over time. Chlamydia positivity was 10.6% (10.4-10.8) among women and 11.5% (11.0-12.0) among men. The majority of positives and partners were treated outside of GUM, with almost 100% of index cases treated.

Conclusions

Screening for and management of chlamydial infection outside of GUM clinics is feasible and have highlighted the high disease burden in persons who would not normally have been tested. Implementation is being accelerated, with total coverage by March 2007. The HPA has a leading role to play in facilitating the implementation of the NCSP across England and closely monitoring its effectiveness in reducing the incidence of chlamydia and its sequelae among young people in England.

Contact details: Lynsey Emmett.
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Community syphilis screening pilot in gay saunas using near patient testing

L Lighton¹, P Aston², B Hughes³, J Ledger⁴, P Morgan¹

- 1 Greater Manchester Health Protection Unit
- 2 Lesbian and Gay Foundation
- 3 Manchester Public Health Development Service
- 4 North Manchester Primary Care Trust

Aim

To assess feasibility of community screening for syphilis as an outbreak control measure

Methods

Since 1998 there has been an increase in cases of syphilis in the North West of England with most of the cases in Manchester. In 2005 there were 368 new cases reported to Health Protection Agency North West with 80 per cent of cases in gay men. Earlier attempts at community screening in 2000 and 2001 have proved problematic. Salivary testing required laboratory processing of specimens so that results could not be given immediately and the participating venues were probably not those with the highest risk clients. This pilot used a near patient syphilis test (Abbott Determine TP) offered at three gay saunas in the Manchester area. A total of 32 sessions were held during January and February 2005. Syphilis testing was offered with a result available in 15 minutes. Participants were also asked to complete a short questionnaire. Men who tested positive were offered referral to GUM services for further management. Staff completed a short survey of their experiences.

Results

Number of men tested, the outcome of tests and results of the questionnaire and staff survey are presented. The cost of the service is compared with previous screening programmes.

Conclusion

Near patient syphilis testing may be a useful addition to standard laboratory techniques for community screening. Careful consideration needs to be given to how highest risk groups will be accessed and to staff training.

Contact details Lorraine Lighton
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many (44%) were diagnosed late as black African individuals infected in the UK (20%). Overall short-term mortality was 3.0% (312/10,503); 6.1% among those diagnosed late and 0.7% among others ($p < 0.01$). Earlier diagnosis would have been expected to reduce short-term mortality by 56% (249 fewer deaths) and all mortality by approximately 32% between 2000 and 2004.

Conclusions

Groups at high risk of late diagnosis should be targeted for appropriate health promotion activities, opportunistic screening, and removal of any barriers to testing. HIV testing in a variety of settings would reduce missed diagnoses, numbers with AIDS at HIV diagnosis, and costs. New patient checks in primary care may provide the earliest opportunity to diagnose infection among recent arrivals to the UK.

Contact details Tim Chadborn
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The late diagnosis and consequent short-term mortality of HIV-infected heterosexuals (England and Wales, 2000-2004)

TR Chadborn¹, VC Delpech¹, CA Sabin², K Sinka¹, BG Evans¹

- 1 HIV/STI Department, Centre for Infections, Health Protection Agency, 61 Colindale Avenue, London NW9 5EQ
- 2 Department of Primary Care and Population Sciences, Royal Free and University College Medical School, Rowland Hill Street, London NW3 2PF

Aim

To describe the proportion of HIV-infected heterosexuals that is diagnosed late and estimate how much mortality could have been prevented by earlier diagnosis.

Methods

Population-based study using routine HIV surveillance reports from England and Wales. Outcome measures were proportions diagnosed late (CD4 count < 200 cells/mm³) and short-term mortality (death within a year of diagnosis). Preventable mortality was estimated assuming mortality could be the same as for those not diagnosed late (assuming no reduction in mortality among those recently arrived in the UK and diagnosed late).

Results

16,375 heterosexuals were diagnosed with HIV between 2000 and 2004: 64% (10,503) with CD4 cell counts at the time of HIV diagnosis. 42% (4,425/10,503) were diagnosed late. Late diagnosis increased with age (p test for trend < 0.01). 20% of women diagnosed antenatally were diagnosed late in comparison to 42% of other women and 49% of men. Late diagnosis ranged from 34% in the North East region to 47% in the South West. 70% of all new diagnoses were black-African heterosexuals, born and infected in Africa. Of those, at least 40% were recent arrivals to the UK and twice as

Antenatal HIV, hepatitis B and syphilis: geographical inequalities in screening for infection and in prevalence amongst pregnant women in London, 2000-2004

I. Giraudon¹, P Trail², J. Arnold², H. Maguire²

- 1 Health Protection Agency, London Regional Epidemiology Unit & European Programme for Intervention Epidemiology Training EPIET
- 2 Health Protection Agency, London Regional Epidemiology Unit

Aim

London has over 110,000 births per year and the highest prevalence of HIV, hepatitis B, and syphilis antenatal infection within the UK. Universal antenatal infection screening aims to allow early diagnosis of infection in order to treat the mothers and to reduce vertical transmission of infection. In London, the Health Protection Agency (HPA) Antenatal Infection Screening Surveillance (AISS) was implemented in 2000. Results are described here.

Methods

Data collected six-monthly from 30 London Trusts' maternity units and laboratories include the total number of booked women; total tests done and results for HIV, hepatitis B and syphilis infection, and rubella susceptibility. Positive HIV results are classified according to whether they are identified prior to or during the pregnancy.

Results

The average proportion of women having antenatal infection screening has improved in London since 2000, from 71 to 92% for HIV and from 93% to 97% for

hepatitis B. Average prevalence increased from 4 to 6/1000 [$<1-12/1000$] for HIV, from 8 to 12/1000 [$<1-28/1000$] for hepatitis B, and from 3 to 5/1000 [$<1-16/1000$] for syphilis. For more than 9,500 pregnant women in 2004 in London, no HIV tests were reportedly done. Half of HIV positive women were not aware of their status prior to their pregnancy. Limitations include denominator variation according to data source and the use of aggregated data.

Conclusion

This simple surveillance system documents the overall improvement in antenatal infection screening in London. Summary reports assist monitoring of implementation of national policy and with individual feedback to Trusts, they enable efforts in screening to be focused where they are still needed. Geographical inequalities are evident within London, for both antenatal screening uptake and prevalence of infection, and this information is useful to local NHS partners for targeted interventions.

Contact details Isabelle Giraudon
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Tuesday 23 May 2006

SESSION II

Outbreak and Incident Management

When meningococcal disease comes to stay – the pragmatic management of a Worcestershire school cluster.

A Banerjee¹, C Constantine², D Kirrage³

- 1 Health Protection Agency (West Midlands Regional Surveillance Unit)
- 2 Worcestershire Acute Hospitals NHS Trust
- 3 Herefordshire and Worcestershire Local Health Protection Unit

Aim

To describe the management of a cluster of meningococcal disease in Malvern, UK.

Background: There were four confirmed cases of group B meningococcal disease in pupils attending the same infant school over a ten-month period in 2003/04. Classroom contacts were not initially given antibiotic prophylaxis as the interval between successive cases exceeded four weeks. However the situation demanded public health action by the outbreak control team (OCT). In spite of limited evidence and some controversy, all pupils and staff were offered antibiotic prophylaxis and invited to take part in a nasopharyngeal carriage study.

Methods

The OCT reviewed the descriptive epidemiology, requested further microbiology typing and consulted with national experts. The carriage study and provision of antibiotic prophylaxis was carried out over one day by trained nurses.

Results

The incidence of meningococcal disease in pupils in the school during the outbreak was 2455 per 100,000 person-years at risk (RR 446 95% CI: 167 to 1191). Microbiological typing was consistent with none, two or three of the cases being caused by the same strain. The carriage study showed a 2.4% prevalence of *Neisseria meningitidis*.

Conclusions

The microbiological typing and carriage study were of limited use in deciding if the cases were linked or elucidating the carriage dynamics of the outbreak. Furthermore, the evidence base on the efficacy of provision of antibiotic prophylaxis to classroom contacts in these circumstances was not clear. No further cases

had been reported by January 2006. We do not know if the provision of wider antibiotics prophylaxis helped achieve this.

Important learning points from the incident include the key roles of consultation and communication. In addition, we question whether the four-week interval for cases to be considered potentially linked should be reconsidered.

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A national response to a local incident: a case of hepatitis B reactivation in a Dublin dialysis unit

L Thornton¹, F Fitzpatrick², D De La Harpe³, N Murphy¹, A Brennan¹

- 1 Health Protection Surveillance Centre, Dublin
- 2 National Virus Reference Laboratory, Dublin
- 3 HSE-Eastern Region

Introduction

In April 2005, a case of reactivation of hepatitis B virus (HBV) infection occurred in a patient undergoing haemodialysis in a Dublin hospital. Given the fact that the incident potentially affected patients attending hospitals in all parts of the country, a national incident team was set up coordinate the response to the incident: to ensure that all potentially exposed patients were informed, tested and vaccinated as appropriate; to advise on the action to be taken in the event of a new case being identified; to collate data on laboratory testing and vaccination of patients.

Results

A total of 306 dialysis patients, attending 17 different dialysis centres, were identified as having been potentially exposed as a result of this incident. A programme of HBV serological testing and vaccination was instituted. The majority of patients in this cohort had not previously been vaccinated against HBV: fully vaccinated (13.4%), partially vaccinated (4.6%), unvaccinated (15.7%), and unknown vaccination status (62.7%). Eleven patients (3.6%) had evidence of past infection. A total of 2,938 HBsAg tests were carried out. Seven patients had vaccine-related weak positive HBsAg results. There was no evidence that any patient acquired HBV infection as a result of cross-infection from the index patient.

Conclusions

Local incidents in dialysis units can have national implications. This incident highlighted serious deficiencies in current structures and practices, and a lack of appropriate guidelines. There were positive outcomes from this incident in that the majority of Irish dialysis patients have now been vaccinated against HBV, and the

lessons learnt from this incident have been used to inform national guidelines on HBV vaccination and testing, and on the management of incidents of blood-borne virus infection in a renal setting.

Contact details Fidelma Fitzpatrick
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Hepatitis C – a lookback and patient notification exercise. Challenges for a local Health Protection Unit and issues for patient safety

L Dyke, M Tahir, H Mohamed
Health Protection Agency, West Midlands

Background

Following an investigation of a female patient with iatrogenic hepatitis C, it was discovered that the healthcare worker (HCW), who had performed her caesarean section, was hepatitis C positive.

Subsequently a nationally coordinated lookback and patient notification exercise was carried out, based on advice from UKAP. The exercise involved 25 hospitals at which the HCW had been employed full-time or as a locum.

Aim

The aim was to identify all patients who had undergone an exposure-prone procedure (EPP), which the HCW had performed, or assisted with, to notify patients for whom there was a significant risk of transmission, and to offer the opportunity for counselling and testing for Hepatitis C.

Methods

Manual and electronic searches of labour ward records, birth registers and theatre databases were carried out, as well as trawling through over five hundred patient records.

Patients identified as at significant risk were notified by letter. A local helpline was set up and appointments offered for counselling and testing.

Results

60 patients were identified as having been at significant risk and of these 59 were notified by letter. 51 came forward for testing. Out of these 1 result was equivocal suggesting previous exposure to HCV and therefore transmission from the HCW was possible.

Conclusions

Lessons learned from this and other similar exercises include issues around communication between the nationally coordinating and local teams, the role and responsibilities of the local Health Protection Unit, issues

regarding gaining commitment of local partners and mobilisation of scarce resources and most importantly, issues around record keeping, data collection and systems for patient safety.

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endemic countries remains paramount in anyone seeking pre-travel advice.

Contact details Dr Aidan Kirkpatrick
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The occurrence of a sporadic case of imported rabies

Dr Aidan Kirkpatrick¹, Dr Marko Petrovic¹, Dr Judith Chaloner¹, Dr Tom Solomon², Dr Rita Burman³, Amra Beedaysee³

- 1 Greater Manchester Health Protection Unit
- 2 Department of Neurological Science, University of Liverpool
- 3 The Pennine Acute Hospitals NHS Trust

Aim

To describe the public health operational management of a sporadic case of imported rabies.

Methods

A case of imported rabies was notified to Greater Manchester Health Protection Unit in July 2005. The case had suffered a dog bite whilst on holiday to Goa in February of the same year and although pre-travel advice had been given in line with national guidance, no further medical attention was sought until the case presented with clinical symptoms back in the UK. An incident management team was convened and it was decided to offer post exposure prophylaxis to immediate family members and also those staff members with direct contact with the patients' body fluids since the onset of clinical symptoms. Infection control advice was also offered to any new staff members who were due to care for the patient.

Results

Around 200 hospital and primary care staff were contacted. After careful risk assessment, a total of 74 hospital staff, 3 primary care staff and 8 family members received post exposure prophylaxis. The case sadly died several days after admission to hospital.

Conclusion

This case represents the first case of imported rabies in the UK since 2001. Although there has never been a documented virological confirmed case of natural human-to-human transmission, both bite and non-bite exposure from infected humans can theoretically transmit rabies. Given that rabies is invariably fatal, it was felt prudent to offer post exposure treatment to those with direct contact with the patients' body fluids. Raising awareness of the importance of seeking immediate medical attention after a possible bite in rabies

Tuesday 23 May 2006

SESSION II

Immunisation

Protecting contacts of hepatitis A; What is the difference between vaccine and human normal immunoglobulin?

NS Crowcroft

Aim

To estimate the number of secondary cases that may occur through giving vaccine instead of human normal immunoglobulin (HNIG) to contacts of cases of hepatitis A.

Methods

The efficacy of vaccine when time since exposure is prolonged (more than one week from onset of illness in the index case) is unknown, but is likely to be significantly lower than HNIG. The number of additional secondary cases that may result from using vaccine instead of HNIG was calculated for different levels of vaccine efficacy, estimating HNIG efficacy to be 80%. If the average number of secondary cases occurring in each household following a single case is r , for a single case occurring in a household of size n , with protective efficacy of intervention k and secondary attack ratio in susceptible contacts a then the average number of secondary cases per household, $r = a(1 - k)(n-1)$. The number of households that need to be treated to prevent one secondary case was calculated using estimates of secondary attack ratios and of efficacies of vaccine and HNIG.

Results

For an average household size of 2.3 people, if vaccine efficacy was 50% then 26 households would need to be treated with vaccine more than one week from onset of illness in the index case before one additional secondary case would be observed.

Conclusions

As UK public health professionals manage around one case per month, it would take more than two years for them to observe one additional hepatitis A case amongst contacts using vaccine rather than HNIG. It is unlikely that a difference in efficacy between vaccine and HNIG of 30% would be noticeable to an average practitioner. Public health practice and advice to patients and contacts should be based on evidence rather than experience.

Contact details Natasha S. Crowcroft
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Hepatitis A: What is the impact of guidelines on health protection practice?

S Mathew, J Granerod, NS Crowcroft

Aims

- To evaluate the impact of PHLS guidelines for control of Hepatitis A published in 2001
- To identify areas for improvement, and
- To enable Consultants in Communicable Disease Control (CsCDC) to reflect on their local policy and practice in comparison with that of their peers

Methods

The audit questionnaire was distributed using an electronic mail group of all CsCDC in February–March 2004. This semi-structured questionnaire was based on the questionnaire used in the audit prior to publication of guidelines. Broadly the areas covered included notification and reporting, management of close contacts of sporadic and outbreak cases, vaccination policy and attitudes to use of vaccine and immunoglobulin (HNIG).

Results

Response rate was 67% from Health Protection Units and 40% from CsCDC.

Laboratory reporting continued to be the main source of notification with 79% of CsCDC receiving lab report within a week of testing, an improvement on 2001 ($p=0.059$).

A greater proportion of CsCDC (70% vs 61% $p=0.37$) are reluctant to use HNIG, and the proportion recommending vaccine more than one week from the date of onset also increased (64% vs 44% $p=0.042$).

A large proportion of respondents had local policies that recommended vaccination of population groups at high risk for the infection in line with the guidelines. Outbreak management predominantly with vaccines for all contacts, and HNIG for risk groups. Definition of illness and gaps in evidence base were some areas highlighted for improvement in guidelines.

Conclusions

The guidelines have been widely accepted and used (83% reported use). However modest changes in practice were observed in comparison to previous audit and the

direction of the changes was not always consistent with recommendations. The impact of the findings on implementation of guidelines, and areas for improvement for disease control will be discussed.

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Outcome of infectious disease screening of asylum seekers to Cork City 2002-4

M Burke, J Cronin, F Ryan

Department of Public Health, HSE-SA, Cork. Ireland.

Aim

Applications for asylum in Ireland dramatically increased with over 10,000 yearly since 1999. In May 2000 the government introduced a policy of Dispersal and Direct Provision of asylum seekers to centres throughout the country where accommodation, food and a small weekly allowance is provided. Communicable disease screening (HIV, Hepatitis B, Rubella, Varicella and TB.) and vaccination service is offered on a voluntary basis within centres by a community health team.

The aim of this study was to document the uptake and outcome of a voluntary communicable disease screening service for asylum seekers and to inform public health policy and practice in the area.

Methods

Prospective study for a 3 year period 2002-04 on all attendees at health screening service for asylum seekers in Cork city. Data was collected manually and entered into a modified occupational health database.

Results

Between 2002-4 there were 2802 attendees from 74 countries. The majority (63%) were from Africa followed by the Former Soviet Republic/Eastern Europe (23%). The majority of attendees are young adults, 49% male, and 51% female of whom 31% were pregnant. Outcome of Communicable disease screening: HIV: 2% positive; Hepatitis B: 59% non-immune, 28% natural immunity, 3% acquired immunity, 9% eAg negative and 1% eAg positive carriage. Rubella: 10% non-immune, Varicella: 16% non-immune. 1% had evidence of current infection with TB.

Conclusion

Screening identified significant levels of infection requiring specialist referral and of non-immunity to vaccine preventable diseases in a high-risk population. The policy of accommodating pregnant females who are non-immune to rubella and varicella in large centres needs to be reviewed. The use occupational health software enhanced service delivery and outcome evaluation.

Contact details Maeve Burke
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Wednesday 24 May 2006

SESSION III

Surveillance

Description of a collaborative project to provide timely primary care-derived data for health protection surveillance at SHA level across the UK

S E Harcourt¹, G E Smith¹, J Hippisley-Cox², M Heaps², G Langford², A Porter², M Painter³, M Pringle², R Pebody⁴

- 1 Health Protection Agency West Midlands Regional Surveillance Unit
- 2 Division of Primary Care, Nottingham University
- 3 Health Protection Agency
- 4 Health protection Agency, Centre for Infections

Aim

This HPA/Nottingham University collaborative project aims to provide timely primary care-derived consultation and prescribing data for health protection surveillance to strategic health authority level across the UK.

Methods

Nottingham University Division of Primary Care established QRESEARCH (<http://www.qresearch.org>), a new general practice derived database with Egton Medical Information Systems (EMIS), a major general practice computer systems supplier. QRESEARCH contains descriptive, real-time data on the health needs, risks, care and outcome for over 4 million currently registered patients from a representative sample of 518 UK general practices.

A set of key indicators was established using Read Code groupings to monitor key health protection problems such as influenza-like illness, vomiting and diarrhoea. QRESEARCH is unique in being able to provide timely morbidity data linked to prescribing. This is reflected in some of the indicators, eg. influenza-like illness with antivirals; influenza vaccine uptake and impetigo treated with fusidic acid.

The key indicators are presented as consultation rates per 100,000 practice population at national, regional and SHA level in weekly bulletins distributed to all UK Health Protection Units.

Results

Trends in influenza consultation rates mirror those of established surveillance schemes such as the RCGP Weekly Returns Service.

The Project observed an increase in diagnoses of mumps in the autumn of 2004 that peaked in early spring 2005. The Project can respond quickly to calls for further and more frequent analyses (daily) in response to health

protection emergencies such as the Buncefield Fuel Depot explosion.

Conclusions

This project provides timely morbidity data, linked to prescribing, presented at a geographical level lower than that achieved by other systems. The network of practices has recently been extended to include 2,600 practices (population 17 million) with analyses now possible at PCT level. This timely data presented at a small geographical level will be needed in the event of an influenza pandemic.

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Incidents and outbreaks of tuberculosis in England and Wales

C Anderson, P Sonnenberg.

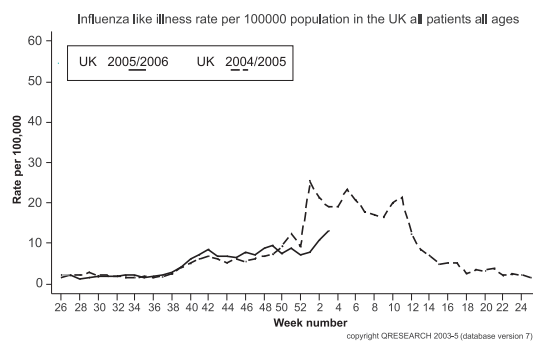
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Aim

To describe the occurrence and characteristics of incidents and outbreaks of tuberculosis in England and Wales in 2005 and compare this with data from 2004.

Methods

The passive system of national tuberculosis incidents and outbreaks surveillance (TBIOS) at HPA Centre for Infections includes data derived from routine and ad hoc reports (weekly regional infection update meetings, phone calls seeking advice and via the Local and Regional Services Incident Database).



Results

In 2005, 338 incidents were recorded in TBIOS for England and Wales, an increase from the 271 reports in 2004. There was a rise in reports from health care (161 versus 111 incidents), detention (32 versus 20 incidents) and educational settings (93 versus 80 incidents). Nearly half of the incidents in 2005 (161, 48%) occurred in health care. 103 reports (64%) involved infected health care workers (63 in hospitals, 33 in nursing homes, 6 in

other medical/health centres, and 1 in the community). The health care worker was known to be sputum smear positive in 47 cases (46%).

Reports varied by region, with the highest number from London (106 in 2004, 120 in 2005) and the fewest from Wales in both years (2 in 2004, 3 in 2005). The number of incidents reported by each region increased from 2004 to 2005, with the exception of the East Midlands and Yorkshire and Humberside.

Conclusions

The increase in number of incidents in 2005 is likely to be due to improvements in reporting but may represent a true increase in tuberculosis incidents. Further work is planned to evaluate ascertainment and completeness, looking specifically at incidents involving health care workers in hospitals in 2005. In addition, a pilot is underway in London to capture more detailed information on each incident to inform the evidence base for the public health management of such events.

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Enhanced Surveillance of Haemolytic Uraemic Syndrome (ENSHURE) and other thrombotic microangiopathies in Scotland

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Without current surveillance of thrombotic microangiopathies such as HUS, neither prevalence nor outcomes are established in either adults or children. ENSHURE seeks to identify both health outcomes and existing management strategies. ENSHURE comprises clinically driven enhanced surveillance of HUS and TTP and also further investigates the links between these syndromes and factors, which have been implicated in the etiology of HUS and TTP including infections, vascular procedures, chemotherapeutic agents and immunosuppressants. Cases were ascertained prospectively by active, national surveillance during 2003 to 2005. Consultants in haematology, infectious diseases, microbiology, nephrology, paediatrics and public health medicine, were sent a monthly e-mail with case definition and asked to indicate whether they had a 'case to report' or 'nil return'. Questionnaires, information sheets and consent forms were then sent to the relevant clinicians/consultants by post. All completed forms and questionnaires were returned to HPS and entered into a database for statistical analyses. From 2003 to 2005, 108 reports of HUS/TTP were notified to HPS of which 72 were clinically designated HUS and 36 as TTP. There were 8 fatalities, 18 cases had some form of renal impairment and of those, 10 became dialysis dependent. Of the 72 reports of HUS, 63 (86%) of these were caused

by verotoxin-producing *E. coli* (VTEC) (60 were due to serotype O157). One atypical HUS case was preceded by parvovirus B19 infection/MMR immunisation. The list of predisposing factors for development of TTP was more varied although previous treatment with tacrolimus/cyclosporine was a significant factor. Treatment regimes for HUS and TTP were not standardised. The study clearly demonstrates that development of HUS or TTP has serious and sometimes fatal consequences and while the differentiation between HUS and TTP is very often difficult, our results suggest that two syndromes have quite different predisposing factors and different clinical parameters and outcomes.

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Enhanced prospective surveillance of extended-spectrum β -lactamase (ESBL)-producing organisms in London and South East England

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Aim

Extended-spectrum β -lactamases confer resistance to oxyimino-cephalosporins (e.g. cefuroxime, cefotaxime and ceftazidime), as well as most other β -lactams. They occur mostly in bacteria from the Enterobacteriaceae family, principally *Escherichia coli* and *Klebsiella pneumoniae*. Previous studies have focused on hospital settings, where there is growing evidence of excess morbidity and mortality associated with ESBL-producing organisms. More recently, new CTX-M-type ESBLs have spread, and ESBL-producers have been seen increasingly in the community setting. As community-based studies are rare, and in order to assess the emerging epidemiology of ESBL-producing Enterobacteriaceae, a prospective enhanced surveillance study was conducted in association with 16 NHS microbiology laboratories across the London and South East regions.

Methods

Each laboratory tested all clinically-significant Enterobacteriaceae isolates for up to three months from August 2004 against either cefpodoxime or both cefotaxime and ceftazidime. Any isolate showing resistance to any of these antibiotics was referred to the ARMRL for confirmation of resistance and mechanism; patient clinical and demographic information were also collected.

Results

1253 isolates were submitted as cephalosporin-resistant, of which 1122 were confirmed as such; 502 had CTX-M enzymes, 149 other ESBLs, and the remainder other mechanisms. Half the patients were aged 75 or over and the majority were female. All participating laboratories encountered isolates with CTX-M ESBLs. *E. coli* was the most common ESBL-producer species, particularly among community patients; *Klebsiella* and *Enterobacter* spp. were more frequent among inpatients. Almost all community isolates were from urine specimens; inpatient specimens came from a wider variety of sites, including blood, respiratory and surgical specimens.

Conclusion

ESBL-producing organisms, especially those with CTX-M ESBLs, are becoming more widespread, both in terms of geographical spread and their extension into the community setting. A case-control study is underway to explore further the risk factors associated with these infections.

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Surveillance of Surgical Site Infection (SSI) of orthopaedic procedures in Scotland, Wales and Northern Ireland: Pan Celtic Data 2004

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- 6 Health Protection Scotland, Glasgow, United Kingdom
- 7 Welsh Assembly Government, Cardiff, United Kingdom

Aim

To determine the surgical site infection rate for orthopaedic procedures in the three countries and enable data to be used for national and international comparisons.

Methods

Four procedures were recommended for surveillance; total hip replacement (THR), total knee replacement (TKR), open reduction of fracture of the trochanteric

region of the femur that requires internal fixation (ORTF) and hemiarthroplasty of the hip (HA). In addition, hospitals could collect data on all other orthopaedic procedures if desired. SSIs were detected on inpatients and on readmission. CDC definitions of infection were utilised, providing a database which is compatible with European initiatives (Improving Patient Safety in Europe [IPSE]). Information was collected by clinical staff with support and co-ordination provided by infection prevention & control teams. Surveillance centres could employ optically scannable questionnaires or receive a download from an IT system. These methods of data transfer provided flexibility.

Results

The SSI rates by risk index category for the 4 recommended operative procedures were as follows:

| Operative procedure | Number* | Risk index | Rate | NNIS rate** |
|----------------------|---------|------------|------|-------------|
| THR/Hemiarthroplasty | 2988 | 0 | 1.4 | 0.9 |
| THR/Hemiarthroplasty | 1789 | 1 | 2.9 | 1.7 |
| THR/Hemiarthroplasty | 238 | 2,3 | 2.9 | 2.5 |
| TKR | 1997 | 0 | 1.4 | 0.9 |
| TKR | 975 | 1 | 3.6 | 1.3 |
| TKR | 109 | 2,3 | 3.7 | 2.3 |
| ORTF | 173 | 0 | 2.9 | - |
| ORTF | 383 | 1 | 2.9 | - |

*includes procedure-risk categories for which at least 100 operations have been reported and risk index was recorded

**NNIS System Report, data January 1992 to October 2004.

Conclusions

The data set permits the calculation of risk-adjusted SSI rates, allowing comparisons between countries, hospitals and within a hospital over time. In future it would be advantageous to produce specific SSI rates for commonly performed procedures e.g. ORTF as the current NNIS/NHSN category "open reduction of fractures" is too broad. Future collaboration will lead to the publication of Pan Celtic reports on caesarean section (coordinated by Scotland) and vascular surgery (coordinated by Wales).

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Trends in uptake of voluntary confidential testing for HIV and hepatitis C among injecting drug users in the UK: implications for prevention

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Aim

Uptake of voluntary confidential testing (VCT) for HIV and hepatitis C (HCV) is key to gaining access to

treatment for those with these infections. It also offers an opportunity for delivering harm reduction messages and protective interventions to injecting drug users (IDUs). Levels of VCT uptake by IDUs in the UK are explored during a period of rising prevalence of HCV (from 33% in 2000 to 44% in 2004) and HIV (from 0.7% to 1.5%).

Method

Data from an ongoing unlinked anonymous survey of IDUs in contact with services was examined to explore trends in HIV and HCV VCT uptake. The survey collects oral fluid samples for anti-HIV and anti-HCV testing, as well as behavioural and demographic data. Multivariable analyses explored trends for current IDUs between 2000 and 2004.

Results

Ever having HIV VCT increased from 50% (1106/2188) in 2000 to 62% (933/1510, adjOR 1.3 $p < 0.01$) in 2004, and for HCV from 47% (986/2009) to 67% (999/1493, adjOR 1.9 $p < 0.01$). When recent testing – last VCT being in the previous two years – was explored there was little change over time for HIV from 51% (536/1056) in 2000 to 48% (416/861) in 2004, or for HCV 58% (511/882) to 62% (472/850). Whilst the proportion of those with their HIV infection diagnosed remained relatively stable over time (68% 53/78, 2000-2004), for HCV it increased from 37% (249/669) in 2000 to 49% (300/615, adjOR 1.3 $p = 0.05$) in 2004.

Discussion: Whilst the proportion of IDUs ever having accepted a VCT for HIV or HCV has increased over time, the levels reporting a recent VCT have remained unchanged. Considering the recent indications of increased HIV and HCV transmission there is a need for efforts to improve awareness of the benefits of VCT and access to testing.

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Wednesday 24 May 2006

SESSION III

Gastro-intestinal Infections and Zoonoses

Lyme borreliosis in England and Wales, 1997-2005

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Aim

Surveillance of Lyme borreliosis in England and Wales.

Methods

Passive surveillance, with enhanced surveillance between 1997 and 2003.

Results

Laboratory-confirmed reports of Lyme borreliosis have fluctuated in recent years with an overall increasing trend. Over 550 reports of serologically diagnosed *B. burgdorferi* infection in England and Wales residents were received during 2005 (1.04/100,000 total population), compared with 500 in 2004 (0.95/100,000), 265 in 2003 (0.50/100,000) and 340 reports in 2002 (0.64/100,000).

The age and sex distribution has been consistent throughout the period, with a male:female ratio of approximately 1:1 throughout all age groups. Approximately 50% of all infections were in patients in the 40-64 year age group, a further 10% occurring in children under 15 years of age. Occupationally-acquired infections remain low, mainly in forestry workers, soldiers, farmers, deer handlers and gamekeepers.

Travel-associated reports of Lyme borreliosis increased slightly in 2005 to 20% of all reports, compared with 15% in 2004 and 12% in 2003. Countries visited include the United States, France, Germany, Scandinavia and other northern European countries, but included Lithuania and Russia for the first time in 2005. Most of these overseas-acquired cases occur in holidaymakers.

Conclusions

A clear, consistent seasonal pattern of reports has been observed. The peak in laboratory reports seen in the summer months represents a peak onset of symptoms in late spring and early summer. Indigenously-acquired infections were identified in patients resident in southern

counties of England. The major foci of Lyme borreliosis in England and Wales are around the New Forest, the South Downs, Salisbury Plain, Exmoor and Thetford Forest. Other endemic areas include the Lake District, the Yorkshire moors and the Scottish Highlands and Islands, but any area in which ticks are present should be regarded as having a potential risk of Lyme.

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Shigellosis: national outbreak of shigellosis presenting as a local outbreak in a nursery

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Aim

To characterise an outbreak of gastrointestinal illness using epidemiological methods supported by detailed microbiological typing of the organism

Methods

A site visit and outbreak control team meeting established the extent of the illness and initiated control measures and surveillance of cases. Close collaboration with the HPA local laboratory and reference laboratory at Cfl allowed molecular characterisation of the *Shigella sonnei* cultures isolated.

After the strain was identified, further cases were found by requesting specimens of *Shigella sonnei* from Leeds and Manchester to be submitted to Cfl reference laboratory for detailed examination.

Working in partnership with Environmental Health Officers (EHOs), the schools involved and with the religious and medical leaders of the Orthodox Jewish community we implemented effective control measures.

Results

Between 24th May 2004 and 26th July 2004 we identified 53 clinical cases, of which 23 were laboratory-confirmed (all *Shigella sonnei*). The reference laboratory confirmed that nationally there were 50 cases of *Shigella sonnei* phage-type 6 (PT6) with a characteristic antibiotic resistance pattern and detailed molecular testing. Four confirmed cases in North East London and four confirmed cases from specimens in Leeds and Manchester areas were identified. This established links with the Orthodox Jewish community elsewhere in London and in Leeds and Manchester.

Control measures included rigorous attention to hand hygiene in institutions and in this community and the exclusion of cases from school for 48 hours after recovery. There were no further cases after the schools broke up in July 2004 and only a single case of this strain was identified in September 2004 in North East London.

Conclusions

This outbreak nicely demonstrates how close collaboration between HPU, laboratories and EHOs uncovered a previously unrecognised national outbreak. Once recognised, close cooperation with the Orthodox Jewish community contributed to interrupting further *Shigella* transmission.

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VTEC outbreak in Mid-West Ireland

R Fitzgerald (on behalf of OCT)

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An outbreak of verotoxigenic *E. coli* (VTEC) occurred in October/November 2005 in Co. Limerick. Over six weeks eighteen cases of VTEC O157 VT2+ were detected in a small rural area. Half were asymptomatic. Ten were pre-school children, three school-going children and five were adults. Two children developed HUS, one requiring peritoneal dialysis. Significant person-to-person transmission is likely. There were five family clusters. Nine pre-school children attended two local childminders (neither notified to the Health Service Executive as required under Irish legislation).

Control measures included screening family, pre-school and school contacts, voluntary closure of relevant childminders and exclusion of affected persons in risk groups. A "boil" notice was placed on a vulnerable local group water scheme (households sharing a privately managed water supply) pending upgrading of disinfection. Extensive water sampling failed to isolate any VTEC. No food source of VTEC was detected. Based on molecular PFGE techniques, VTEC strains from human cases and a cattle source in the area were indistinguishable.

A case-control study found potential exposure to the vulnerable group water scheme a significant risk factor. However, drinking the water was not significantly associated, nor was crèche attendance. Exposure to animals and agricultural practices were not found risk factors for VTEC infection.

This investigation demonstrates the difficulty in determining a definitive cause of an outbreak where considerable person-to-person spread occurs. The risk of an extensive outbreak of VTEC occurring in an agricultural area was evident, especially where water sources are vulnerable to contamination. There is a need to heighten public awareness regarding the vulnerability of group water schemes supply quality, potential exposure to zoonoses in agricultural settings and provisions of child care legislation.

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Risk factors for secondary transmission to household-contacts in a large VTEC O157 outbreak in South Wales, 2005

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- 2 European Programme for Intervention Epidemiology Training

Aim

To identify demographic household characteristics that are risk factors for transmission to household-contacts. To estimate the proportion of secondary cases that may have been preventable through immediate hospitalisation of presumptive VTEC O157 patients.

Methods

We conducted a retrospective cohort study among households that had a case in the three most affected local authority areas. Data on cases and their close contacts, collected during the outbreak, were collated. We established definitions for households, household-contacts, and secondary cases. The outcome was having had a secondary case in a household-contact, and potential risk factors evaluated were demographic household characteristics.

For estimating the proportion of potentially preventable secondary cases, we assumed an incubation period of four days and that primary cases presented with bloody diarrhoea to clinicians three days after illness onset. Consequently, secondary cases with an illness onset eight days after that of the primary case were considered preventable.

Results

In preliminary analysis, 28 (31%) of 91 households had more than one case. Eighteen households were excluded from risk factor analysis, mainly because the primary case was asymptomatic or the additional household case could have been co-primarily infected. Households with a household-contact ≥ 5 years of age living with the primary case were 6.4 times more likely having had at least one secondary case in the household (12/28) than were households without a household-contact of that age (3/45, confidence interval: 2.0 to 20.8). Of 19 individuals who were secondary cases, 11 (58%) had onset dates at least eight days after the onset of a primary case; two of these 11 cases developed haemolytic uraemic syndrome.

Conclusions

In outbreaks of VTEC O157, offering immediate hospitalisation to children presenting to a clinician with bloody diarrhoea, abdominal cramps and no fever; if another child ≥ 5 years of age lives in the same household, may need to be considered.

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An outbreak of cryptosporidiosis in North West Wales, UK

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Aim

To describe the epidemiological investigation and control measures established during an outbreak of *Cryptosporidium hominis* in North Wales.

Methods

In early November 2005, an increase in cases of cryptosporidiosis was noted in North West Wales. A case-control study was conducted. Raw and treated water samples were tested for *Cryptosporidium* oocysts. Cases were defined as people living in Gwynedd or Anglesey with diarrhoeal onset after 1 September 2005 and the presence of *Cryptosporidium hominis* oocysts in faecal sample. Travel-related and secondary cases were excluded. Interviews were conducted with 45 patients and 37 unmatched controls.

Results

Cases had an adjusted odds ratio of 11 (95% CI 1.9 to 67.3) for drinking unboiled tap water, together with a dose response (those who drank more glasses of unboiled tap water a day were more likely to suffer from cryptosporidiosis). Attack rates were almost four times higher (234 per 100,000 population) in the areas supplied by Cwellyn reservoir compared to other sources (64 per 100,000 population) of water supply. Extensive environmental microbiological sampling in the reservoir catchment and molecular testing of isolates revealed several points of entry of *C. hominis* oocysts into the reservoir. Continuous monitoring during the outbreak of treated water from the reservoir showed a mean of 0.02 oocysts per litre. General practitioners and consultant physicians in North West Wales were asked to issue advice on boiling water to immunocompromised patients, in accordance with standard guidance. As the outbreak progressed a general "boil water notice" was issued to the population serviced by the Cwellyn reservoir and a helpline established. The water company installed additional water treatment equipment. The "boil water notice" was withdrawn following installation and testing of ultraviolet water treatment equipment.

Conclusions

This outbreak provides further evidence that the existing regulatory limit for oocysts in drinking water does not correlate with health risk, and has implications for the risk assessments of upland water sources in close proximity to human habitation.

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Wednesday 24 May 2006

SESSION IV

Late Breakers/Hot Topics

The role of local HPU's in the major incident at the Buncefield Oil Terminal, Sunday 11th December 2005

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Aim

To describe the role of HPU's at the Buncefield oil depot fire, which was the largest chemical incident experienced in England since the setting up of the HPA in 2003.

Methods

The incident will be described in public health terms using accounts produced by participants at the Health Gold Cell. The investigation and management will be described in terms of chronology, discussions regarding various public health actions (including closure of schools) and the rationale underlying them.

The resources, including staffing, required to support Health Gold, the experience of the CsCDC from Hertfordshire and Essex and the nature and magnitude of calls received by staff in the Hertfordshire HPT during the incident will be presented.

Results

Buncefield is the fifth largest oil depot in the UK handling 2.37 million tons of petrol and oil products annually and filling 400 tanker trucks daily. The explosion was recorded on the UK seismograph network at distances of 300

kms and heard by people as far away as Belgium and the Netherlands. Altogether, 20 tanks burned for several days, the fire was 200 metres in diameter and the plume stretched for 70 miles across southern England. More than 2,000 people were evacuated from their homes in a half-mile exclusion zone around the site.

Advice regarding the incident was provided by the HPA at national level, the Chemical Hazards and Poisons Division, local HPU staff and the local Public Health Network.

Conclusions

Practical implications for the HPU's included increased workload, and the opportunity costs thereof. These should be considered in future major incident planning

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Evaluation of HCV opportunistic screening among general practice attendees

Dr Eleanor Anderson, Prof David Goldberg
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Aim

To evaluate the effectiveness, and acceptability of a general practice, age criterion based HCV opportunistic screening intervention, implemented in a high HCV and injecting drug use (IDU) prevalence area, which aims to increase case detection, referral and management for HCV chronically infected (HCV RNA positive) individuals.

Methods

Over a 6-month period, all 30-54 years old general practice attendees from a high HCV and IDU prevalence area were, where appropriate, opportunistically offered HCV testing and counselling by their GP or practice nurse. HCV test uptake and case yield were determined and compared to uptake and yield over the same time period in a comparison practice not exposed to the intervention. Patient, administrator and clinician acceptability was evaluated by a series of semi-structured interviews.

Results

From November 2003 till May 2004, 584 patients of the intervention practice in the target age group attended at least one appointment when the counsellor was available, 421 (72%) were offered HCV counselling and testing by their GP or practice nurse, 117 (28%) were actually tested, and 15 (12.8%) were found to be HCV antibody positive. No HCV testing in this age group occurred in the comparison practice during this time. Fourteen out of 15 HCV antibody positive patients had a history of ever IDU and 11 were former IDUs. Five clinically significant adverse psychological reactions were

reported among the HCV antibody positive patients. Nine of the HCV antibody positive patients were found to be HCV PCR positive, nine accepted referral, five attended at least one referral appointment, and three underwent liver biopsy. There were three individuals awaiting treatment as of January 2005.

Conclusions

Primary care based opportunistic HCV screening of 30-54 years old general practice attendees in a high HCV and IDU prevalence area does increase case detection; however, the fact that all cases detected had known risk factors, most commonly former IDU, suggests that a targeted screening approach may be more effective even in an estimated high prevalence area.

Moreover, in general, the acceptability of the HCV screening intervention to patients and clinicians was suboptimal. Intense, rapidly accessible psychological support services are likely to be required given the occurrence of, and concern over, adverse psychological responses to an HCV diagnosis, and the rates of attrition from the HCV primary and secondary care management processes; these require to be provided in tandem with measures to raise awareness, reduce stigma and normalise HCV testing if primary care based opportunistic screening for HCV is to be successful.

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From incident management to prevention – piloting a mercury amnesty

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- 4 Rochdale Primary Care Trust

Aim

The North West has a long industrial past. In recent years, Greater Manchester Health Protection Unit (and the former Health Authorities) has managed a number of incidents involving exposure of young people to mercury. The agencies involved in these incidents agreed to pilot a mercury amnesty in one Local Authority area of Greater Manchester to remove uncontrolled mercury from the environment and prevent further exposure incidents.

Methods

A multi-agency partnership group was established with representatives from Rochdale Metropolitan Borough Council; Environment Agency; Health Protection Agency and Rochdale Primary Care Trust. The local population was invited to surrender mercury to the Local Authority over the three month period July – September 2005. Press statements were released and letters sent home via schools.

Results

Between 1.5 and 2 kgs of mercury were recovered from nine domestic premises. The costs of the amnesty were approximately £400. This compares favourably with the costs of managing a mercury exposure incident estimated at £50,000 for one large incident.

Conclusions

The use of a mercury amnesty is cheap and one way of removing significant quantities of uncontrolled mercury from the local environment. The plan now is to roll the amnesty out across Greater Manchester.

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Malaria cases in travellers returning from The Gambia: case series

CJ Williams, J Jones, P Chiodini

Aim

To describe the epidemiology of cases of malaria in travellers returning from The Gambia, in order to highlight the risks and suggest public health measures.

Methods

Data on cases diagnosed between 1.11.05 and 31.1.06 were obtained from notifications to the Malaria Reference Laboratory, local and regional health protection units, and notifying clinicians. Information on travel to The Gambia was obtained from sources in the travel industry.

Results

Around 4.5 thousand holiday makers visit the Gambia each month during the “Winter sun” season. 25 cases of falciparum malaria were reported during the period studied, of which 3 died. The mean age was 42 years, and three-quarters of infections were in men. Most (over 80%) were travelling on holiday, and occurred in November and December. Some travellers had been on fishing or wildlife-viewing excursions away from their resort. None were clearly documented as having taken appropriate malaria prophylaxis.

Conclusions

Malaria is a significant risk in travellers to The Gambia. The mortality rate for this series was high (12%), emphasising the need for public health activity to support travellers in planning for appropriate anti-mosquito and anti-malarial chemoprophylaxis measures.

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Section 37/38 in TB: some logistical difficulties and ethical issues

M Meltzer, H Pickles

Aim

To question current arrangements for obtaining a section 37/38, to review the logistical difficulties in removing a patient to hospital, and to expose ethical dilemmas around compulsion in TB.

Methods and Results

Based on experience of a case of infectious TB, we describe the process for obtaining sections 37/38. During this incident, we illustrate well the difficulties of coordinating and synchronising a police and ambulance presence to effect removal of the patient under section 37.

One PCT was responsible for commissioning the NHS care of the patient; another PCT employed the TB health visitor working with the local authority of residence of the patient which had the s37 legal powers; and the infectious disease hospital for which the s38 was required was in yet another Local Authority/PCT area. The same Health Protection Unit covered all 3 areas.

During the prolonged removal process, the public health rationale for removal became entangled with and overshadowed by the patient's physical and mental state.

Conclusions

The Public Health Act (Control of Disease Act) 1984 is not well suited to current structures and we await the promised revision with interest. Meanwhile, pragmatic solutions have to be found for complex situations. We note there may be advantages in using a Local Authority proper officer other than the CCDC. Approved social workers (ASWs) may have the skills and especially the experience lacking in the communicable disease team when forced removals are required. We reflect on what provision a revision of the law might address around difficult to treat TB patients, and whether explicit allowance should be made for compulsion for the patient's interests and not just for the public health. This may need to include compulsory treatment.

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Notes

Poster Abstracts

Sexual Health

Identifying outbreaks of sexually transmitted infection in Wales: who cares?

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Aim

To explore knowledge of, and attitudes to, identification and investigation of outbreaks of sexually transmitted infection (STI) among health professionals in Wales.

Methods

We conducted a cross-sectional survey in Wales in June 2005 of all physicians of genitourinary medicine (GUM, n=11), a consultant microbiologist from each laboratory (n=14), all consultants in communicable disease control (n=5), and regional epidemiologists at the Communicable Disease Surveillance Centre (n=4). We defined an outbreak as an unusual cluster of infections, or as more infections involving the same pathogen than normally expected.

Results

26 (76%) of 34 survey recipients returned a questionnaire. Among those, 19 (73%) ranked the investigation of STI outbreaks as important or very important, and 17 (65%) perceived participation in the investigation of an STI outbreak as part of their responsibility. However, only six (25%) of 24 had actively searched their computer system or patient records for a possible STI outbreak in the previous 12 months, and 15 (63%) had never looked for an outbreak. Of seven GUM physicians who said they had identified at least one STI outbreak, three had never informed the public health authorities. During the previous five years, only one STI outbreak led to the setting up of a multi-disciplinary outbreak control team resulting in detailed contact investigations and proactive control measures in Wales.

Conclusions

Prompt identification and coordinated investigation of outbreaks, usually through a multidisciplinary outbreak control team, is central to the control of many infectious diseases. This does not appear to be the case for STIs, representing, we believe, a lost opportunity. The importance of identifying and investigating STI outbreaks needs to be strengthened among health professionals in

Wales. Since surveillance schemes for STIs are similar throughout the UK, it is likely that a comparable situation exists in the other UK countries.

The added value of antenatal hepatitis B screening

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Aim

National guidance recommends screening all pregnant women for Hepatitis B (HB). This report shows the added value of the follow up of such women who are HB positive, in Birmingham and Solihull.

Methods

All HB positive reports from the National Blood Service are sent to the local Antenatal Screening Co-ordinators, who forward them to the local Health Protection Unit and the Antenatal HB nurse. The HB nurse provides advice and where necessary sees the woman and screens contacts for HB. The HB nurse provides ongoing support to the pregnant women.

The nurse liaises with GPs and refers all positive women and contacts to a Consultant Hepatologist for assessment. Other non-immune contacts are offered vaccination.

Results

Of 110 Hepatitis B positive women with an expected delivery date in 2005, the two largest ethnic groups were Black African (37) and Pakistani (33). The rest were mainly from a variety of Asian groups. Of the 110:

- 26 women were already seeing a Consultant Hepatologist.
- 7 were no longer with their partners,
- 3 moved out of the area,
- 20 had been dealt with by their GP
- 25 had partner +/- children who had already been screened/vaccinated.

Contact screening for the other 29 women involved 56 contacts (24 partners, 12 children and 20 others). Of this, 6 were carriers of HB, 17 were immune from past infection, 32 were not immune and 1 had been vaccinated but required a booster.

Conclusions

- The nurse post ensured consistent advice and follow-up for women and contacts. This led to a wider awareness of HB and potentially improved uptake of neonatal HB immunisation

- Follow up of contacts revealed asymptomatic carriers and those benefiting from vaccination.

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Chlamydia infection and infertility; a review of the evidence

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Aim

To determine the excess risk of tubal factor infertility (TFI) in women infected with genital chlamydia by performing a systematic review.

Methods

A written protocol, agreed by all collaborators, was established to define the criteria for performing the review. The protocol included; (i) search terms, (ii) inclusion and exclusion criteria, and (iii) twelve suitable databases for article searching.

A search strategy was devised and used to create a library of abstracts and titles for which no abstract was available. Reader 1 scanned all abstracts and titles for relevance to the research question and divided them into two libraries: 'papers for further analysis' and 'papers not relevant'. The former consisted of abstracts of original articles, reviews, and titles (no abstract available), incorporating keywords relevant to the study. Reader 2 reviewed a 10% random sample of the two libraries. Both readers agreed on which papers to include for validation.

Results

The search generated 3,004 abstracts and titles for review; 451 were selected for further analysis. One article satisfied the inclusion criteria: a longitudinal study measuring pregnancy rates in adolescent females with and without evidence of chlamydia infection at baseline; no statistically significant difference in pregnancy rates was found. The paper was rejected for further analysis due to the lack of follow up numbers and high oral contraceptive use.

One additional paper described an initiative which involved modelling the probability of TFI following chlamydia infection (0.02%).

Conclusion

No studies describing the excess risk of infertility have been published. Increased levels of screening and

treatment preclude the (ethical) possibility of performing a cohort study to determine the attributable risk of infertility following untreated or prolonged chlamydia infection. Therefore, a statistical modelling approach will be required to address this more fully.

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Adults with low CD4 cell counts that were not receiving antiretroviral therapy in England, Wales and Northern Ireland in 2004

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Aim

To investigate factors that were associated with the proportion of adults with low CD4 cell counts (CD4 < 200 cells per mm³) that were not receiving antiretroviral therapy (ART)

Methods

The residence-based Survey of Prevalent HIV Infections Diagnosed (SOPHID) undertakes an annual census of HIV-infected individuals accessing HIV services. This is used to provide an epidemiological profile of, and determine the prevalence of, individuals living with diagnosed HIV infections in England, Wales and Northern Ireland. Adults seen for HIV-related care in 2004 with both CD4 and ARV reported were included in the dataset.

Results

Individuals with CD4 < 200 accounted for 14% (4,934/35,242) of all reports in 2004, of which 19% (950) were not on ARV. The proportion of individuals with CD4 < 200 not on ARV varied from 9% (Northern Ireland) to 36% (North East) across region of treatment. There was also variation across SHAs within regions. The proportion not on ARV varied by most advanced clinical stage: 55% death with AIDS, 13% AIDS, 17% symptoms pre-AIDS and 29% asymptomatic. The proportion of individuals not on ARV decreased with increasing age (26% at 15-24; 15% at 50+). There was little difference observed by ethnicity, exposure category or sex. Recent diagnoses accounted for 16% (84/514) of individuals not on ARV with CD4 < 200 in London.

Conclusions

One in five individuals with low CD4 cell counts were not on ARV, of which relatively few were because they were recently diagnosed. Further work will be required to investigate regional and demographic differences in the proportion not on treatment and to consider reasons why people were not on ARV according to BHIVA guidelines.

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Extrapolating numbers accessing HIV services to 2006 by Strategic Health Authority: England, Wales and Northern Ireland

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Aim

To extrapolate numbers accessing HIV services to 2006 by Strategic Health Authority (SHA) or equivalent.

Methods

The residence-based Survey of Prevalent HIV Infections Diagnosed (SOPHID) undertakes an annual census of HIV-infected individuals accessing HIV services.

Trends in the number of HIV-infected individuals resident in each SHA were used to predict the numbers accessing care in 2005 and 2006. Only data from the last three surveys (2002-2004) were used as trends changed markedly between 2000 and 2002. A linear regression model was used for the extrapolations allowing for variability in the rate of increase between SHAs.

Results

Numbers accessing HIV services are predicted to increase from 40,265 in 2004 to 44,991 in 2005 and 50,197 in 2006. This is an overall increase of 12% from 2004 to 2005 (range 7% to 16% by SHA) and 25% from 2004 to 2006 (range 15% to 53% by SHA). SHAs in London are expected to continue to have the largest numbers accessing HIV services and largest numerical increases but the smallest proportional increases (particularly SE London SHA: increasing by 1150 [21%] from 2004 to 6567 in 2006). Outside London, the largest numerical increase predicted is in Greater Manchester SHA (710 [34%]) and the greatest proportional increase in Shropshire & Staffordshire SHA (181 [53%]).

Some SHAs have less stable trends so predictions for these may be less accurate than those with more stable trends.

Conclusions

Some SHAs will experience much greater increases in numbers accessing HIV services than others. SHA level extrapolations can be used for national and local planning and to inform funding allocations. Although current trends appear linear, trends are influenced by factors such as migration, and therefore predictions beyond a year should be used cautiously and the appropriate model should be reconsidered each year.

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Individuals travelling beyond their nearest services for HIV care

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Aim

To explore the distances people travel for HIV care, and whether they travel beyond their local services.

Methods

The residence-based Survey of Prevalent HIV Infections Diagnosed (SOPHID) survey undertakes an annual census of people accessing HIV-related services. Data from the 2003 survey were used to calculate distances between patients' residence and HIV services (in England and Wales), and determine whether they used local services. Analyses were done for residents in London (L) and in the rest of England and Wales (RoEW) separately.

Results

35,428 individuals accessed HIV services in 2003: 77% (27,197) had sufficient information to be included in this analysis. There was geographical clustering of patients around HIV centres, particularly in urban areas. The majority of individuals lived within 5km of an HIV service (69% RoEW, 98% L). The maximum distance between a patient and their nearest service was 91km (RoEW) and 9.5km (L); mean distance 5.7km and 2.1km. In RoEW there were large variations in distances to nearest services – 98% lived more than 20km from their nearest service in Dyfed Powys SHA compared to 0% in Bedfordshire & Hertfordshire. Local service use was 61% in RoEW residents compared to 42% in London residents, but there were differences by population subgroup: white individuals, children, and men who have sex with men were more likely to travel beyond their local services. We also plan to explore social deprivation as a factor influencing local service use and distance travelled.

Conclusions

Large numbers of individuals are exercising their choice by travelling beyond their nearest services for HIV care – does this mean that there is inadequate provision of services locally? Many individuals have to travel far to access their nearest HIV services. These data support the expansion of HIV testing and care services into a variety of healthcare settings.

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The incidence of AIDS among HIV-infected individuals (England and Wales, 1990-2004)

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Aim

To describe the incidence of AIDS among HIV-infected individuals.

Methods: Population-based study using reports of HIV diagnoses, AIDS diagnoses and CD4 cell counts. Time at risk was only considered where a CD4 count identified the risk of AIDS. The time at risk was censored at the end of 2004, first AIDS diagnosis or death. Poisson regression was used to compare incidence rate ratios. **Results:** 459,771 CD4 counts from 38,782 patients identified 108,659 person-years at risk (PYAR) between 1990 and 2004 with 6,688 (17%) AIDS diagnoses. An increasing proportion of the time-at-risk was spent with high CD4 counts but absolute time-at-risk with CD4 < 100 cells per mm³ remained fairly stable over time. There was an overall AIDS incidence of 6.2% per PYAR. Incidence was 11% per PYAR in 1990, 18% in 1994, 4.1% in 1999 and 2.2% in 2004. Incidence was 82% per PYAR with CD4 < 50. Incidence was 18% per PYAR during the first year after HIV diagnosis and 3.6% subsequently. Incidence at the time of HIV diagnosis accounted for 34% of the total AIDS incidence between 1990 and 1995 increasing to 91% in 2004.

The incidence rate at CD4 < 50 was more than twice that at CD4 50-99 and twenty times that at CD4 200-249. The incidence rate for women diagnosed antenatally was a fifth of that in MSM. The incidence rate for time-at-risk during the year after HIV diagnosis increased from 2.69 between 1990 and 1995 to 10.48 in 2003 and 2004.

Conclusions

Incidence remains high at low CD4 counts and the absolute time-at-risk with low CD4 counts changed little over time. The incidence of AIDS declined substantially in the HAART era but individuals recently diagnosed have benefited little and now experience a disproportionate burden of AIDS morbidity that could be reduced by earlier HIV testing.

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Outbreak and Incident Management

Management of a cryptosporidiosis outbreak in Ireland – lessons learned

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An outbreak of Cryptosporidiosis in SEHB, Ireland was noted from routine surveillance in March 2005 (4 cases in 3 weeks, all on a town supply serving 25,000 people). Thirtyone cases were notified, mainly young children, with eight people hospitalised. Cryptosporidium cysts and Giardia were identified in the water distribution system.

The aim is to identify the lessons learned in managing the outbreak.

Methods

- Methods included multidisciplinary outbreak control team meetings, enhanced surveillance (ES), additional laboratory typing.
- Series of water tests/ measures to reduce output/ visual inspection of river/ risk assessment (RA)
- Health professionals and farmers were contacted
- A case control study (CCS) was undertaken
- Boil notice; Grade A association between human illness and water. ⁽¹⁾

Results

From enhanced surveillance, crèche attendance, pool swimming, private wells were identified as risk factors. Animal carcasses were found in the source river and veterinary advice was given to farmers. Risk assessment found water treatment plant A to be very high risk and plant B to be moderate risk.

C. hominis was identified in seven cases: *C. muris*, *C. andersoni*, *C. parvum* were identified in water results. Details of other water test results will be presented.

In the case control study, 55% of cases and 33% of controls did not report drinking any public water. Controls drank more water than cases. Public water was not identified as significantly associated with illness. Cases had a significant association with a private water supply (OR 4.8, 95% CI 1.5-14.7, p 0.04) & animal contact (OR 2.6, 95% CI 0.95-6.9, p 0.03).

Conclusions

- Good working relationships*
- Resources for prolonged investigation
- Time to consolidate links with local authority*/ acquire specialist knowledge
- Boil notice implications
- Was case control study of benefit?

References

1. Report of the Waterborne Cryptosporidiosis Subcommittee of the Scientific Advisory Committee, National Disease Surveillance Centre 2004 {Appendix: 2 Association between Human Illness and Water, adapted from UK PHLS guidelines (PHLS 1996)}

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Outbreak of *Salmonella enteritidis* PT25 in Suffolk – possible relation to egg supply for oriental restaurants

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Background

An outbreak of *Salmonella enteritidis* infection associated with a Chinese restaurant in Suffolk occurred in June 2005. *S. enteritidis* PT 25, a rare phagetype, was isolated from cases and further sporadic cases, unconnected with the original outbreak, were later identified in Suffolk and Essex. An outbreak was declared and an Outbreak Control Team convened to investigate and control the outbreak.

Methods

Epidemiological, environmental and microbiological investigations.

Results

Of a total of 15 cases, nine had eaten egg dishes at one of three oriental food restaurants in Suffolk and Essex and two were food handlers in one of the restaurants. Three of four cases not associated with restaurants had a history of egg consumption within the incubation period. From case food histories, eggs were strongly suspected as the source. *S. enteritidis* PT25 was not in the Zoonosis Order database, suggesting that eggs were sourced from outside the UK. Investigation led to a packing station sourcing eggs from Holland at the time of the outbreak. Other *Salmonella* species were isolated from this supplier's eggs but no *S. enteritidis* PT25 found.

Conclusions

The Suffolk *S. enteritidis* PT25 outbreak consisted of three distinct clusters linked to meals eaten at oriental restaurants, plus sporadic cases. Imported eggs were suspected. These were in dishes such as egg-fried rice, prone to *Salmonella* contamination if prepared at insufficient temperatures. Non-restaurant-associated

cases also had eggs as a possible source, although bought from different retailers implying that an imported batch of contaminated eggs could have had a wider circulation. Investigations were unable to prove a link to a particular egg supplier or producer. Measures were put in place aimed at reducing risks of food contamination in the restaurants involved, and discussions held on how to prevent importation of infected eggs.

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Developing the use of a geospatial-mapping tool in managing incidents of communicable disease

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Aim

The aim of this presentation is to demonstrate the use of a new integrated geospatial mapping tool

Methods

Communicable diseases are by definition disease that spread between one person and another, or if we consider zoonotic disease spread between humans and animals or birds. Developing and implementing effective control measures depends on understanding as much as possible about the spread of the infection in both geographical and temporal terms as possible. The use of knowledge about the temporal and geographical spread of infection is a classic epidemiological technique and was used by Robert Baker to produce his Sanitary map of Leeds in 1842 and by John Snow to plot his map of cholera around the Broad Street pump in 1854.

The introduction of computers and information technology has enabled the production of geographical information systems of increasing complexity and sophistication. Geographical data entered now can be instantly represented in an agreed format alongside existing information to produce maps showing specific incidents or attack rates in defined geographical areas.

Results

The combination of a geospatial mapping facility with a field management system such as HPZone allows high quality real time information to be available to those managing the incident, to those responsible higher up the management structure and to those seeking to review the incident in retrospect for audit purposes.

Conclusions

The use of mapping is not new, but we learn from history that it is a powerful epidemiological tool. There are new opportunities for control of communicable disease using combined modern technologies. In developing standards for communicable disease control and incident management the active use of these systems needs to be considered.

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Biological dosimetry for radiation overexposures

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Aim

To describe the biological dosimetry service that HPA operates for the investigation of actual or suspected overexposures to ionising radiation.

Methods

The technique is based on the analysis of dicentric chromosome aberrations in metaphases obtained from cultured blood lymphocytes. The frequencies of dicentrics can be related to radiation dose by in vitro calibration.

Results

The method is well established at HPA which provides a service for cases arising in UK and abroad. It can identify false alarms, which is reassuring and, in cases of real exposure, provides dose estimates independent of physics methods. Reliable dosimetry informs physicians when counseling or occasionally treating patients. There is provision for scaling-up for rapid emergency response to radiological accidents or terrorism involving large numbers of people.

Conclusions

We need to optimize plans so that biological dosimetry can work efficiently with the regional public health community in rapid response to major radiological events.

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Mass carbon monoxide poisoning at indoor go-karting event

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Aim

The investigation of an incident of carbon monoxide poisoning among 34 people attending a go-karting event.

Methods

In December 2005 seven cases of carbon monoxide (CO) poisoning were reported to the Leeds Health Protection Team. All the cases had been admitted to hospital, following a birthday celebration at an indoor go-karting track. Their carboxyhaemoglobin levels were between 14 – 14.9% on admission. Symptoms included headache, nausea, vomiting, dizziness, and shaking. All the cases were treated overnight with oxygen and discharged the following morning. Further investigation of the incident revealed that 34 attendees at the event were potentially exposed and many had experienced symptoms though only seven had presented to medical services. A site visit found that the exposure was due to high levels of CO being emitted from new Liquid Petroleum Gas (LPG) karts that were being used for the first time. The karts were withdrawn immediately from use to prevent further exposure.

Results

A health questionnaire was sent to 34 known attendees at the event, 17 (50%) responded. 16 (94%) of the responders experienced some symptoms consistent with CO poisoning.

Conclusions

This incident highlights the dangers of CO poisoning resulting from the use of petroleum powered engines (go-karts, fork lift trucks, tools or generators) in enclosed spaces. Anecdotal evidence suggests that this is not an isolated incident at karting tracks and there appears to be a lack of awareness of the dangers of CO poisoning among regular karters and the track owners.

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Threats within buildings – legionella in a luxury block of flats

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Summary

A person who lived in a luxury block of flats was notified as having legionnaire's disease. Administration of the CFI surveillance questionnaire identified no external risk factors. A decision to undertake home water testing was made.

Samples were taken from both the hot and cold water supply in the kitchen and bathroom. All grew legionella pneumophilius serogroup 1. An incident meeting was held in conjunction with a visit to the property. Several risks were identified,

1. There were two tanks with pumps in the basement, that supplied water to all of the flats above the fourth floor
2. The position of the internal tanks (the cold water tank sat above the hot water tank with little lagging)
3. The temperature of the water in the flat (the cold water was warm and the hot was lukewarm).

More extensive testing identified that legionella pneumophilius serogroup 1 was not only still in the flat of the index case, but also in a flat on the sixth floor and from one of the basement tanks.

A second incident meeting agreed an action plan for treatment of the basement tanks, communication to the other leaseholders in the block and the advice re remedial action required to be safe. The basement tanks were cleaned and hyperchlorinated, all the flats in the block had their tanks hyperchlorinated. Following this process the same flats and basement tanks were tested. This identified that legionella was still present in the flats although the basement tanks were clear.

A further incident meeting was held with agreement that a full risk assessment of the buildings water supply be undertaken and advice from the Health and Safety Executive secured.

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Outbreak of *Salmonella* agbeni in a care home

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Aim

To describe outbreak investigation and control

Methods

Descriptive epidemiology, case-control study (June cluster) and microbiological screening of residents, staff and the environment.

Results

A total of 14 cases of infection with *S.agbeni* were confirmed among staff and residents at the home, 5 in June 2005 and 9 in November 2005. One resident was ill in both June and November. Practices at the home were generally satisfactory, although some breaches in infection control were identified and addressed. No food source was identified either from analytical epidemiology or environmental sampling. Swabbing revealed widespread contamination of living areas in the home. Dust samples from five out of seven vacuum cleaners were positive for *S.agbeni*. The home was deep cleaned and vacuum cleaners replaced. Dust samples from two of three new vacuum cleaners subsequently tested positive for *S.agbeni*.

Conclusions

This is the first reported outbreak of *Salmonella agbeni* in the UK. Investigations were unable to identify the original source, but revealed widespread environmental contamination, which was not cleared through deep cleaning, and could have accounted for infection of some of the cases. Follow-up of human cases indicates that some elderly residents continue to excrete pathogens for several months after their initial infection. These residents can act as an ongoing source of salmonella within the home which may have resulted in the cross-infection of staff or other residents. The management of risk in these circumstances is discussed.

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An outbreak of acute hepatitis B in a residential nursing home

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Aim

To describe the management of a cluster of acute hepatitis B in a residential nursing home.

Methods

In June 2005 two cases of acute hepatitis B were identified in residents of a nursing home in Greater Manchester. An incident team was convened and it was decided to urgently review infection control procedures at the home, undertake detailed investigation of associated risk factors, screen all staff and residents and undertake environmental sampling of identified risk areas.

Results

A further acute case in a resident was identified clinically and as a result of the screening a further asymptomatic acute case was identified. All four acute cases were among residents from one house of the home and were all diabetics who required regular blood glucose testing. None of the cases had any other risk factors for hepatitis B infection. Phylogenetic typing of these cases revealed that three of the cases with sufficient DNA to be typed were identical. Screening also identified two carriers (one staff and one resident) of low infectivity and no evidence of recent infection and found evidence of past resolved infection in four staff members and one resident. There was no evidence to suggest that these cases were connected to the cluster of acute cases. Infection control procedures were found to be suboptimal particularly in respect of use of blood glucose monitoring equipment. Hepatitis B immunisation was offered to all staff and residents. The home took on board all recommendations for improved infection control procedures and to date no further cases of hepatitis B have emerged.

Conclusion

The environmental and epidemiological evidence, whilst not conclusive, suggests that this cluster of acute cases occurred as a result of a break down in infection control around blood glucose testing. This outbreak reinforces the importance of strict infection control practice around blood glucose monitoring in community settings. No previous incidents from the UK have been reported in the published literature.

Investigation of a neuroblastoma cluster in Coventry

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Aim

In January 2006 the local newspaper's front page reported on 4 children with Neuroblastoma living within a 2-mile radius of each other, within 3 electoral wards. The children, aged between 5 and 7 years, had been diagnosed over a 5 year period. Within Coventry as a whole less than one new case per year would be

expected. A preliminary investigation was required to determine the need for any further epidemiological assessment.

Methods

The PCT and HPA scoped the issue prior to meeting the journalist. A meeting with the parents was held within 2 days. The case notes and environmental causes were reviewed, together with the incidence of Neuroblastoma for Coventry and the West Midlands. A summary of the proposed investigation was provided to agencies and clinicians involved with the children.

The parents described how the diagnosis was made for their child and highlighted their concerns. They were encouraged to describe potential common causes so that these could be explored. More definitive literature searches were undertaken, incidence figures were validated and tumour histology was reviewed.

Results

It appears this geographical cluster of cases was a chance occurrence. The directly age standardised rate of Neuroblastoma for Coventry is 1.1 (95% CI 0.68 – 1.52) per 100,000 compared to 1.22 (1.11 – 1.33) for the West Midlands as a whole. One of the electoral wards has a Standardised Incidence Ratio of 9.18 (1.11 – 33.16), one a SIR of 3.37 (0.09 – 18.76) and the third 2.85 (0.07 – 15.87). No plausible single common exposure could be identified.

Conclusion

As with many other apparent cancer clusters, it appears that this geographical cluster of cases was a chance occurrence.

HPA response to a community health survey in relation to a mobile phone mast

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Aim

To respond to a local community who had undertaken a health survey because of concerns about a mobile phone mast located near a primary school.

Methods

The HPA agreed to comment on the health survey and to summarise the evidence on the potential health risks of mobile telephony for the local community. A report was produced following consultation with colleagues in the Radiological Protection Department. This was discussed with local authority representatives prior to

a meeting with local residents (NB. These meetings are scheduled for the coming weeks).

Results

The health survey detailed a wide range of non-specific symptoms that were being experienced by local residents. The limitations of the survey were identified and, in context of understanding their anxiety, these will be fed back to community representatives. The evidence produced in the Stewart reports will be shared with the residents, together with information concerning national and international research into the health effects of mobile telephony.

The process will be completed by the end of March and it is anticipated that there will be a number of learning points that can be shared with the conference.

Conclusion

Responding to this health survey presented the HPA with an opportunity to work with a local community, educating them about the evidence concerning mobile telephony, whilst acknowledging the limitations of the evidence base. The importance of good communication in sharing scientific evidence with community groups who have a different perception of risk to health professionals, is considered to be key.

Influenza B outbreak in two primary schools in North West London

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Aim

To investigate the cause of large scale sickness absence in school children in two primary schools in North West London where symptoms included fever, sore throat, headache and vomiting.

Methods

Names and addresses of children who had been reported as unwell to the schools were obtained from the Head teachers of School A and School B. Sampling kits for viral studies were obtained from the Microbiology laboratories of the local Acute Trusts. Affected families were contacted by phone and permission sought to pay a home visit to collect throat or nasal swabs. Two teams each consisting of a Consultant in Communicable Disease Control and a Health Protection Nurse visited the homes of the families that consented and took throat swabs in all cases and nasal swabs in some cases. The samples were delivered to the Microbiology laboratories of the local Acute Trusts for processing.

Results

Ten samples were collected in total – 4 from School A and 6 from school B. Two of the four samples from school A were positive for Influenza B, one was negative and one sample was equivocal. All 6 samples from school B were negative for Influenza A and B.

Conclusions

Influenza B infection was confirmed in one school in North West London. Though no positive results were confirmed from school B, the similarity of the symptoms and the duration of illness between the children indicate that the probable cause of illness in School B was also Influenza B. It is recommended that Health Protection Units should consider taking nasal and throat swabs from 5-10 children in any reported outbreaks in schools where the symptoms are suggestive of a flu-like illness.

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One outbreak or two? Investigation of an *E. coli* O157 outbreak in a South Wales school

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Aim

To identify whether an outbreak of *E. coli* O157 related to an infant school (first date of onset 23rd October 2005, 16 cases) which started later than the main outbreak (first date of onset 10th September 2005, approximately 150 cases) but in the same area was related to the first outbreak or not.

Methods

Several hypotheses on the source were developed and epidemiological, microbiological and environmental investigations designed to test each one.

Results

Epidemiology: There were 16 cases of which 9 were symptomatic. All cases were either pupils in the nursery class or household contacts and carers of cases in the nursery class. The first 4 cases were all nursery class pupils and onset of symptoms occurred in the week of the half-term holiday. For the children in the nursery class, the risk of contracting infection appeared greater in those who were in school for the whole of the week before half-term than in those who missed days of school that week.

Microbiology

The *E. coli* O157 organism was phage type 21/28, the same as the main outbreak, but a different sub-type.

Environmental results: The nursery was fully compliant with the control measures instigated to control *E. coli* O157. Some common nursery class activities were identified which might have allowed person-to-person spread. There had also been a high level of rainfall in the period leading up to half-term.

Conclusions

No source was found for the outbreak in this school but there was evidence that it was not related to the main outbreak.

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A school outbreak of tuberculosis: key features and control challenges

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Aim

To describe the public health management and key challenges relating to an outbreak of tuberculosis (TB) in a second level school in a deprived urban area in the Republic of Ireland.

Methods

In late August 2005, towards the end of the school holidays, a young teenage case of infectious pulmonary TB from a deprived area of Cork City was notified to the Public Health Department. There was an extended history of respiratory symptoms. Eight days later, a second case of TB was notified in a teenager attending the same school and class. An outbreak control meeting was convened. All students (n=428) and staff were offered screening in line with regional and national policy following reopening of the school. A contact tracing database was maintained.

Results

An extra-pulmonary case of TB, notified four months earlier was subsequently linked to the outbreak. A total of five cases of TB disease were identified among students as part of the outbreak and 24 students were offered prophylaxis. Unsurprisingly, the highest prevalence of TB infection and disease was observed among students in the same school year as the index case (n=16 (25.4%); crude odds ratio 9.36 (95% CI 4.50-19.49, p<0.001) compared to other school years).

Conclusions

There are several noteworthy features related to this outbreak. It occurred in a deprived area with a relatively

high incidence of TB. Three further cases among family contacts of the index were identified. Issues arose around compliance with screening and recommended therapy, and the need for supervision. BCG vaccination was offered to all students following completion of screening as most were unvaccinated.

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An outbreak of Giardia in a swimming pool

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Aim

To describe the public health management of a Giardia outbreak

Methods

In July 2005 there was a higher than expected rate of Giardia within the Trafford area of Greater Manchester particularly affecting young children. Existing enhanced surveillance questionnaires revealed that a high proportion of cases had attended one local swimming pool. An urgent assessment of the disinfection procedures and operational management of the swimming pool was undertaken. Ten cases were re-interviewed using a trawling questionnaire to ascertain whether other risk factors existed and whether on-going transmission within households or schools might be occurring.

Results

Seven out of the ten primary cases had attended the swimming pool in the two weeks prior to the onset of their illness. Other risk factors however included: foreign travel, attendance at nurseries and contact with other infected family members/friends. Infection control procedures at the pool were unsatisfactory as there was no chlorine in a water sample taken on the day that Environmental Health officers visited. The swimming pool filter was five years old and due to be changed. Samples of pool water and sand from the filter were found to be negative for both Giardia and Cryptosporidium. The pool was privately owned and was used for swimming lessons, some involving babies under six months of age.

Conclusion

Although the route of transmission was not proven by either epidemiological or microbiological investigation,

the pool was voluntarily closed whilst an independent audit of the plant and systems at the pool was carried out. This incident has valuable lessons including: the importance of regular pool inspections, risk assessments and the use of standard operational procedures; the vulnerability of young children to gastrointestinal infection and raising awareness amongst the public regarding not visiting pools until two weeks after a gastrointestinal illness has resolved.

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The investigation and control of a *C.difficile* outbreak in a busy acute hospital

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Aim

To investigate a continuing outbreak of *C. difficile* diarrhoea in an acute hospital, establishing the characteristics of the organism and patient risk factors and applying these to outbreak control.

Methods

From the time that the observed cases of *C. difficile* diarrhoea exceeded the expected in an acute hospital in the autumn of 2003, enhanced surveillance was set up to include presentation and source of the disease, prior antibiotic treatment and outcome. Typing of *C.difficile* was instituted when the case characteristics and fatality rate suggested a possible new strain in the UK. A prospective cohort study was undertaken to establish antibiotic history and other risk factors over a period of six months when the pattern of disease was particularly severe and long lasting. The features of all fatal cases were also established through a detailed case note review.

Results

Since early 2004 there have been about 350 cases of *C.difficile* diarrhoea in hospital inpatients with approximately 10 % associated mortality. From 2005 the causative organism was cultured and typed when possible.. About 60% of the 70 typed organisms were ribotype 027 strain, reported from North America as a virulent, heavy toxin producing, antibiotic resistant strain, associated with pseudomembranous colitis and other recognised complications of *C. difficile* infection. The results of the cohort study undertaken will be presented, together with continuing enhanced surveillance data from the winter of 2005/6 when there new linked cases occurred in an acute assessment unit.

Conclusions

The investigation of the outbreak has identified similarities between the epidemiology of *C.difficile* 027 in the UK and N America. The management of the outbreak is now subject to a Health Care Commission enquiry.

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Outbreak of hepatitis B infection at a nursing home caused by inappropriate use of a lancing device designed for single patient use

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Abstract

An outbreak of hepatitis B infection was investigated in an elderly care home in North London. Seven cases of acute hepatitis B infection were identified among the diabetic residents of the nursing home. Two patients died as a result of the infection. The attack rate among the diabetic population of the care home was 54%, compared to 0% among the non-diabetic residents. There was no significant difference in the attack rates between insulin dependent and non insulin dependent diabetic residents. A lancing device designed for single patient self testing for monitoring blood glucose was identified to be the most likely cause of the outbreak. The device was shared amongst patients although on each occasion a new sterile needle is used.

Investigations into this outbreak have revealed the extent to which professionals directly involved in diabetic care were unaware of the different risks posed by these lancing devices, particularly for patient testing in comparison to self-testing. From reports of more recent outbreaks of hepatitis B in the country, it became apparent that the use of these devices on multiple patients was widespread and that a large proportion of professionals including medical and nursing staff of hospitals and of general practice surgeries, pharmacists, nursing homes staff were unaware of the risks of cross contamination posed by the inappropriate use of these devices. There was also a lack of clarity in the information provided on their own website by the manufacturers of the devices.

In the light of these findings various recommendations for action at national level have been made. These include implementation of education measures to nursing home care staff to raise the awareness of cross-contamination from the shared use of lancing devices for finger pricking,

provision of clearer information from the manufacturers, mandatory screening and vaccination of the staff, and provision of a comprehensive occupational health service to staff of nursing homes.

lower uptake of MMR vaccine (OR=0.231; 95%CI = 0.075-0.710).

Conclusions

Professional confidence in answering parents' questions, and the prioritisation of immunisation activities, are associated with higher uptake of MMR vaccine. The method of delivery of MMR vaccine in general practice is not associated with uptake.

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Immunisation

Uptake of MMR vaccine and General Practice characteristics: the role of professional confidence

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Aim

The study aims to investigate the characteristics that are associated with differences in uptake of MMR in general practice.

Methods

A cross sectional postal survey of all 121 General Practices in the six Local Health Boards in North Wales was used to collect data on Practice and immunisation characteristics. Childhood immunisation uptake by Practice, for the study period, was retrieved from the computerised Child Health System. The association between delivery and prioritisation characteristics in the General Practice and measles, mumps and rubella (MMR) vaccine uptake at age 24 months for children registered at the practice was analysed.

Results

The uptake of MMR vaccine in North Wales in 2003 was 78.8% at 24 months age (range 52.7-100%). Doctors referring to the 'Immunisation against infectious diseases' (the 'Green Book') to answer parental immunisation queries are less confident at explaining MMR research ($p=0.015$) and their practice has a lower uptake of MMR vaccine ($p=0.018$). There is a positive association between practice prioritisation of childhood immunisation and MMR vaccine uptake ($r = 0.267$); no other general practice immunisation delivery characteristic was associated with a significant difference in MMR vaccine uptake. After adjusting for characteristics found to be significantly associated with uptake, a logistic regression model showed that use of the 'Green Book' is independently associated

The true task ahead in achieving MMR coverage

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Aim

The North West Region of England has suffered a large epidemic of mumps in recent years, driven by a partially protected cohort of individuals who had only received one dose of MMR vaccine. To understand the real numbers of unprotected individuals and identify any future potentially unprotected cohorts, we need a better measure of children's vaccination status than simple coverage rates.

Methods

We present the use of a simple formula to estimate the numbers of potentially unprotected individuals as a quarterly and annual cohort in PCTs in North West England. The formula takes account of not only unvaccinated individuals but also those vaccinated but not sufficiently immunised. The results are mapped online as part of the NW Office surveillance output.

Results

Estimating numbers of vulnerable cases by PCT over time adds a clarifying dimension to the COVER data and enables PCTs to better quantify and respond to short falls in vaccination. It is hoped that routine presentation of this data through the online mapping atlas will help improve uptake rates. We present the calculated estimates for the region and discuss the response from local colleagues.

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Prison hepatitis B vaccination coverage: an update

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Aim

To monitor hepatitis B vaccination coverage among prisoners in England and Wales

Methods

Hepatitis B vaccination monthly returns to the Health Protection Agency - Centre for Infections

Results

- The majority of prisons in England and Wales are reporting hepatitis B vaccination among prisoners (100/143 as of June 2005)
- Hepatitis B vaccination in prisons within 1 month of reception is less than one-third (30.5%) among reporting prisons (Jan-June 2005)
- Hepatitis B vaccination within 1 month of reception is highly variable among prisons, regardless of prison category (0%-100%)

Conclusions

- Despite hepatitis B vaccination coverage in prisons in England and Wales being low:
 - Prison remains the most common source of hepatitis B vaccination among injecting drug users in the *community*
 - Results demonstrate prison-based vaccination programmes can successfully impact on *community* vaccination coverage
 - Prison can be an effective and innovative setting for health interventions, particularly among hard-to-reach populations in the community, such as injecting drug users

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An investigation into factors affecting MMR and flu vaccine uptake at GP Practice level in Cumbria and Lancashire

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Aim

To identify GP Practice factors responsible for variations in MMR and flu vaccine uptake between the 355 GP Practices in Cumbria and Lancashire.

Methods

GP Practice information on MMR uptake at 2 years and flu vaccine uptake over 65 years was linked to information on:

- Practice size, age structure of practice population, the number of GPs, and GMS versus PMS Practice
- Index of multiple deprivation and ethnicity, at super output area level
- The Practice system for immunisation, obtained from a questionnaire survey of Practice Nurses

Results

MMR uptake:

Mean MMR uptake was 86.4%, range 59%-98%. High uptake was associated with a self-reported Practice MMR strategy, (OR 3.76, 95% CI 1.26–12.04). There was a general, although non-significant trend, for higher uptake when health visitors immunised as opposed to practice nurses. Uptake was not associated with deprivation, proportion of white versus non-white population, Practice size, the ratio of GPs or Practice Nurses to patients, or GMS versus PMS Practice.

Flu vaccine uptake:

Mean flu vaccine uptake was 71.9%, range 54.4% to 94.9%. Uptake was significantly lower in women over 75yrs (72.4%) compared to men over 75yrs (78.5%, $p < 0.0001$). Uptake was positively associated with a high GP: patient ratio (OR 1.74, 95% CI 1.09–2.77) and negatively associated with increased deprivation ($p < 0.001$) and with increased non-white population ($p = 0.001$). The only independent predictor of uptake was an increased non-white population. Uptake was not associated with Practice size, the ratio of practice nurses to patients, or GMS versus PMS Practice.

Conclusions

Large variations in uptake of MMR and flu vaccine occur between GP Practices. This study has identified several factors which explain a small amount of this variation. Practice size is not important. Ethnic structure explains some of the variation in flu vaccine uptake, and having an MMR strategy improves MMR uptake. High uptake Practices probably achieve this through a combination of methods, including a “team-working” approach.

Surveillance

Healthcare Associated Infection (HCAI) prevalence survey: the South African Pilot

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Aim

To assess the feasibility of employing a cost-effective methodology for conducting a HCAI prevalence survey accessible to all healthcare facilities in Gauteng Province, South Africa.

Methods

A protocol was developed based on the Hospital in Europe Link for Infection Control through Surveillance (HELICS) prevalence core dataset and employing the CDC definitions of infections. A surveillance questionnaire was constructed covering four areas of infection - primary bloodstream, respiratory tract, surgical site and urinary tract. Six pilot hospitals (2 academic, 2 regional and 2 private) and key healthcare personnel were identified by the Gauteng Department of Health. A South African facilitator and a member of HISC staff provided a three-day training course. Competency of data collectors was determined by both the administration of a test at the end of the course and on-site evaluations during the ensuing period of manual data collection (March - May 2005). Questionnaires, once collected from all pilot sites, were sent to HISC for processing and data analysis.

Results

The prevalence rates for primary bloodstream infection, respiratory tract infection, surgical site infection and urinary tract infection were as follows:

| HCAI | Number of patients at risk | Infections | Rate % |
|-------------------------------|----------------------------|------------|--------|
| Primary bloodstream infection | 2672 | 134 | 5.01 |
| Respiratory tract infection | 2672 | 77 | 2.88 |
| Surgical site infection | 761 | 23 | 3.00 |
| Urinary tract infection | 2672 | 41 | 1.53 |

Conclusions

The initial results of the pilot were encouraging. The methodology, definitions and use of the scannable surveillance questionnaires proved highly acceptable to those involved in data collection. This method of performing surveillance with minimal cost implications

has been endorsed by the South African Department of Health as the most feasible approach of conducting an all-South African HCAI prevalence survey. Furthermore the forthcoming Hospital Infection Society's HCAI Prevalence Survey of England, Wales and Northern Ireland will be predominantly based upon the method employed in South Africa.

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TB and malaria incidence estimated by capture-recapture

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Abstract

The "capture-recapture" method estimates the number of prevalent or incident cases of a disease by examining two or more incomplete databases known as "lists."

We present a simple family of three statistical models which can be used when data from the "lists" have been selected and collated.

These models have been designed to be relevant to epidemiological applications and easier to understand than the models often employed.

Examples to be presented include TB in England, and Malaria in England and Wales.

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Imported malaria to Northern Ireland: improving surveillance for better intervention

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Malaria is a preventable disease, which is under notified in the UK.

Aim

This study aimed to evaluate the current surveillance arrangements in Northern Ireland (NI), describe the epidemiology of malaria and make appropriate recommendations.

Methods

A case was defined as a resident or visitor to NI with laboratory confirmed malaria that was diagnosed by the NI haematology laboratories and /or the Malaria Reference Laboratory (MRL) from 1998-2003. Laboratory data were compared with notifications and hospital admission data.

Results

One hundred and fourteen laboratory cases were identified compared with 63 notifications received by the regional surveillance centre. Six cases were associated with two episodes of malaria reflecting recurrence and or reinfection. *P. falciparum* was the most common infection with two fatalities reported and was particularly associated with travel to West Africa. Most cases were associated with short visits to malarious areas. Thirty-three percent of all cases did not take prophylaxis and, of those that did, approximately half were taking a prophylactic regime appropriate to the region visited.

Conclusions

This study highlights the need for improved surveillance of malaria in order to capture risk factors and other relevant information to inform public and professional education. This would facilitate increasing local awareness, enhancing prescription of and compliance with appropriate chemoprophylaxis and enabling early diagnosis and treatment of malaria.

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Use of statistical control charts to improve reporting of surveillance of MRSA in Scotland

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Aim

The aim of this research is to introduce some alternative methods to report and evaluate MRSA diagnoses in Scotland.

Methods

Current tabular methods have similarities to league tables with the obvious pit falls that someone 'has to be last' and that 'first' is not necessarily good. We recognise the need to use methods that will simultaneously ensure that standards are being met while avoiding comparative labels such as best, worst, first and last. Funnel plots meet our needs as they can be used to identify groups that are not meeting a required standard while avoiding the ranking of the other groups.

Current control charts look at stability of performance over time and reveal large changes in performance but moderate sustained rises in prevalence are difficult to spot. We have utilised CUSUM charts to investigate trends within groups. The CUSUM method identifies both large changes and smaller sustained drifts in prevalence.

Results

This paper will develop examples of CUSUM charts and Funnel plots of MRSA bacteraemia rates within acute healthcare division in Scotland.

Conclusions

We believe that Statistical Process Control methods are a useful tool in monitoring complex healthcare processes, particularly where it is necessary to simultaneously compare institutions and trends over time. In particular they avoid stigmatising institutions unnecessarily while enabling poorly performing institutions to be identified. Other surveillance systems may want to investigate whether these methodologies are appropriate.

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Mapping from a web-based surveillance system

D. Irwin for the Essex Health Protection Unit

A web-based surveillance system, designed and maintained by Essex Health Protection Unit, became operational in 2004 when two neighbouring HPUs piloted the system; three other units joined in 2005. Migration of Essex HPU to the system was dependant on completion of a mapping module to ensure no loss of functionality between the existing Essex surveillance database and the web-based system. This was achieved at the end of 2005.

The mapping module allows selected diseases or organisms to be shown geographically, either as a single layer (e.g. all mumps cases for one year) or as a collection of layers (e.g. selected STI by clinic – each clinic as one layer). This function has proved a valuable surveillance tool, illustrating the distribution of cases. On one occasion rising numbers of *Cryptosporidium*, acquired in the UK, were noted with no obvious source identified. On mapping the cases it was found that numbers were concentrated in certain areas indicating the mains water supply as a possible source. This was further highlighted when compared to the water company's map of water treatment works and outlets. Other examples where mapping has proved useful are in highlighting the growing numbers of mumps cases by geographical area and showing the distribution of selected cases of sexually transmitted infections in relation to clinic attended, which is disseminated to sexual health leads and clinicians (sexual health data is currently mapped from the previous Essex surveillance database).

Standard maps of selected diseases and time period are available for each HPU to download; these are updated on a regular basis. At present, more specific ad-hoc maps are plotted by the HPU in Essex.

Future developments include the imminent incorporation of the sexual health module onto the system (for Essex only) and exploring the use of thematic maps and diseases e.g. tuberculosis and deprivation index.

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Designing and implementing a syndromic surveillance system for the 2005 G8 Summit, Scotland

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Aim

In 18 weeks, Health Protection Scotland (HPS) deployed an automated syndromic surveillance system to rapidly detect outbreaks, including bio-terrorism attacks, during the G8 Summit at Gleneagles, Scotland, 6th to 8th July 2005.

Methods

Sources of information included staff absenteeism from hotel occupational health services, daily counts of clinical specimens submitted to laboratories, triage diagnoses from National Health Service hospital Accident & Emergency (A&E) departments, coded discharge

diagnoses from General Practice medical surgeries (GPs), and from the on-site clinic at the Summit venue. We monitored daily calls to a national helpline for health advice. We analysed six-month retrospective and 2-weeks prospective data using a cumulative sum-based statistical algorithm and a log-linear regression model to detect, within 24 hours, any unusual trends in the surveillance data. The system had a fax-based track for real-time identification of 12 unusual and severe syndrome presentations. We defined a signal as a statistically significant increase in observed syndrome counts compared to expected counts. We used a decision algorithm to define if a signal needed to be further investigated.

Results

Between July 4 - 15, 2005, HPS analysed 225 A&E visits, 188 GP visits, 2566 orders for laboratory tests, and 23193 telephone calls for health advice. The detection algorithms gave 95 signals. Four surveillance forms were faxed to HPS. Thirteen signals and 4 cases in the fax-back system were investigated. We identified a cluster of 4 cases of gastroenteritis among the police force.

Conclusions

The surveillance system successfully integrated surveillance data from multiple sites. It detected a cluster of gastroenteritis and provided a sense of security that an intentional release of biological agents would be discovered in a timely manner.

Serological surveillance and public health in England and Wales

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Aim

reviewing the contribution of the HPA Seroepidemiology Unit to public health in England and Wales

Methods

In 1986 the England and Wales Seroepidemiology programme was initiated, incorporating a convenience sample collection approximating the general population. Collection occurs annually targeting the complete age range, using sera submitted to laboratories across England and Wales for microbiological examination. Only age, sex and submitting laboratory is retained and >100,000 samples are currently available. This resource is used to estimate antibody prevalence to a variety of infections of public health relevance generating information contributing to health policy, estimating disease burden and providing data for mathematical modelling. Specific examples of each will be provided.

Results

This resource forms a core component of the integrated surveillance system for measles, mumps and rubella and was initiated after the decision to introduce MMR vaccine. It was instrumental when making the informed decision to undertake the national measles/rubella initiative of 1994 (MR campaign), introduce the two-dose schedule of MMR in 1996 and provided valuable evidence to support the need for an acellular pertussis booster vaccine in 2001. Similarly, the programme has been used to show there is little evidence to support universal HBV vaccination in the UK.

The programme has also been used to describe the pre-vaccination epidemiology of other important infections to assist the formulation of future health policy. Notable examples include *Helicobacter pylori*, Herpes Simplex 1&2, Hepatitis A, B&C, Parvovirus B19, Varicella Zoster and *Toxoplasma gondii*.

Conclusions

The sample collection forms a unique and valuable public health resource. Serological surveillance is ongoing and has been particularly useful for formulating, evaluating and monitoring health policy in a multidisciplinary environment incorporating epidemiology, microbiology and mathematical modelling.

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The Single-use Instrument Surveillance Programme (SISP) as a model system for safe introduction of disposable instrumentation and new surgical procedures

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- 3 SISP, National Public Health Service for Wales

Aim

Delivery of adenotonsillectomy surgery in Wales, free of risk from vCJD, resulted in the establishment of the Single-use instrument Surveillance Programme (SISP) in conjunction with the Welsh Assembly Government, Welsh Association of Otorhinlaryngologists, National Public Health Service for Wales and Surgical Materials Testing Laboratory. The aim was to determine if surgery with single-use instruments could be as safe as with their equivalent reusable instruments, and provide evidence-based reassurance of safe practice to the public and healthcare professionals.

Methods

A detailed laboratory audit provided a single supplier of instruments. A paper-based surveillance system included

all hospitals carrying out adenotonsillectomy surgery in Wales. Instrument safety was measured by postoperative haemorrhage rates (bleeds requiring return to theatre). Instrument performance was based on assessment of each instrument in use by the surgeon at the time of surgery. Data were collated in a central database and externally audited using the Patient Episode Database for Wales.

Results

10,800 operations collected in total (2003–2005). The estimated crude postoperative haemorrhage rate was 0.9% (2005), compared with 1.6% (2003). Total percentage of instrument problems with usage was 0.2% (2005) and 0.7% (2003). All instruments were problematic on initiation. Minor instrument problems have decreased five-fold, major have halved (2006). External validation of the system suggested the surveillance is above 95% efficient at recording the desired surgical procedures, and more than 90% of postoperative haemorrhages have been identified.

Conclusions

This surveillance emphasises the need for clinician ownership of data. Postoperative haemorrhage rates with single-use adenotonsillectomy instruments are similar to reusable instruments if appropriately specified and monitored in use. SISP has adopted a unique surveillance allowing problematic instruments to be detected efficiently without compromising patient safety, and is equipped for introduction of further surgical instruments and procedures, an example to be followed by the rest of the UK.

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Surveillance of *Clostridium difficile* in Wales

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Aim

Surveillance of *C. difficile* in hospital inpatients aged over 65 was made mandatory by the Welsh Assembly Government in January 2005. The Welsh Healthcare Associated Infection Programme was charged with facilitating the surveillance programme, producing all Wales reports and giving Trusts easy access to data.

Methods

The majority of microbiology laboratories in Wales have a data warehouse called Datastore in addition to their laboratory information system. Datastore scripts were written, to routinely extract the results of *C. difficile* tests. Duplicate positives (28 days) are excluded. Extracted data are loaded into a database for storage and analysis. Age-specific hospital admissions are used to calculate

rates at a Trust, hospital or specialty level. Trust personnel access data via a reporting database available over the intranet. Staff issued with a username and password can export data or run a series of predefined reports. Trusts are able to see data for all other Trusts in Wales for comparison. The *C. difficile* data are updated monthly and the admissions are updated quarterly.

Results

Trusts currently have access to *C. difficile* rates up to September 05. The all Wales rate of *C. difficile*/1000 admissions inpatients in the over 65s is 15. Statistical Process Control charts comparing rates in Trusts show that one Trust has a higher than expected rate. An investigation into the antibiotic prescribing policies at this Trust is being carried out.

Conclusions

The method described has produced national surveillance data for *C. difficile* with a minimum of effort from the microbiology laboratories involved. The data is held centrally and used for the production of national reports but infection control teams have easy access to their own data.

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Searching for sources: a diffuse rise in listeriosis in North West England through 2005

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Aim

A rise in cases of human listeriosis detected in England during 2005 was particularly evident in the North West Region. This presentation outlines aspects of the region-wide investigation and its conclusions.

Methods

Human cases of listeriosis were investigated using a detailed food questionnaire and specimens were typed using serotyping, AFLP and PFGE. A large number of food, water and environmental (FWE) samples were also collected and similarly typed. The results of both surveys were mapped to identify possible sources of transmission.

Results

Premises of a cold meat producer and distributor yielded a number of positive environmental samples and a detailed record of the distribution chain and the PFGE types of positive samples was obtained. We used these to try and match a proportion of types spatially and

temporally with human cases and distinguish linked and sporadic cases.

Conclusions

This region wide investigation has identified potential gaps in available surveillance intelligence and reinforced the benefits of close local working relationships with environmental health departments. It has also highlighted the need for routine provision of standard typing methods and services for human and environmental isolates of *Listeria* spp. We outline recommendations for integrated national surveillance of *Listeria* spp combining information from field investigations and laboratory isolates.

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Improving health-screening policies of overseas nurses employed in residential/nursing homes: discrimination or risk minimisation?

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Aim

The aim of this project is to determine what occupational health screening, if any, exists for overseas staff employed in residential care facilities in West Sussex.

Objectives

1. To identify, at the time of the audit, the number of nursing /residential organisations who employ overseas nurses/care staff and their main countries of origin.
2. To identify whether these staff were recruited directly or through nursing agencies.
3. To identify if any occupational health policies specifically for overseas nurses exist within these organisations.
4. To identify what screening processes are in place and if evidence is received regarding HIV, HEP B/C and TB status before employment.

Methods

A questionnaire, designed to answer the objectives, was distributed to approx. 500 nursing/residential organisations in West Sussex.

Results

At the time of writing, 65% of the organisations that responded employ care staff that originate from overseas.

Overseas care staff amounted to 24% of the female and 48% of the male care staff workforce. Only one of the organisations had a screening and occupational health policy specifically for nurses originating from overseas. A small minority receive any evidence of HIV, Hep B, Hep C or TB screening or status. Where nursing agencies were used, evidence of screening was only slightly higher than if recruited directly.

Conclusions

The organisations reported that they did not screen staff intensively for infectious disease, despite evidence that staff originating from overseas have higher risk of previous exposure. We identified a need for advice and education to support these organisations in effectively protecting their workforce and vulnerable client group.

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Acute hepatitis B – the risk factors in Lothian

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C. Evans – Consultant in Public Health – NHS Lothian

Aim

To determine the major risk factors for infection with acute hepatitis B in Lothian NHS Board area.

Methods

A retrospective review of the case notes held in Lothian NHS Board Public Health Department. These are records of interviews which have taken place, with the case, soon after notification of the diagnosis to the Health Protection Team. Cases are interviewed in order to attempt to identify possible sources of infection and any contacts that would benefit from receiving immunoglobulin/vaccination.

A review of the cases notified in 2001-2004 has already taken place. Years 1997-2000 and 2005 will also be included.

Results

A total of 47 cases of acute hepatitis B were notified to Lothian Health Protection Team during 2001-2004. The major risk factors for infection with acute Hepatitis B were identified as sexual activity (32%), followed by injecting drug use (9%).

Conclusions

From initial review of case notes from 2001-2004, sexual activity is the most common major risk factor in Lothian NHS Board area.

Acute hepatitis B is still a potentially life-threatening condition. It is of major Public Health importance as it is preventable. Methods of preventing infection include vaccination of susceptible individuals, widespread

education on routes of transmission of blood borne viruses and advice on avoidance of risk-taking behaviour.

Knowledge of the main methods of transmission locally can enable targeted prevention activity.

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General practitioner sentinel surveillance for travellers' diarrhoea

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Aim

Travellers' diarrhoea (TD) is the most common health problem among international travellers. Much of the burden falls on general practitioners although very little is known about general practice consultations for TD.

Methods

A sentinel surveillance scheme of 30 volunteer general practices distributed throughout Wales, UK (combined practice population 215,000; 7.5% of the population) routinely provides weekly reports of consultations for eight infectious diseases to the Communicable Disease Surveillance Centre. TD, defined as 'diarrhoea (three or more loose stools in 24 hours) starting whilst abroad or within seven days of return', was introduced as a new reportable infection in July 2002.

Results

Between 1 Jul 2002 and 31 Mar 2005, there were 90 reports of TD, with peaks during the summer months. The mean annual consultation rate was 15.2 per 100,000 population (95% confidence interval 12.2 to 18.7). No practice reported more than three cases in a single week but mean annual reporting rates for TD by practice varied between 2.9 and 96.8 per 100,000 population. High TD reporters were different from top reporting practices for other diseases in the sentinel scheme. TD rates by sex were similar but there was considerable variation in rates between age groups with the highest rate (34 per 100,000; 95%CI 21 to 53) occurring in the 15-24 year age group. Most travellers had visited European Union countries, predominantly Spain. A higher proportion of travellers had visited destinations outside Europe and North America (mostly India or North Africa) (38% vs. 11%; $\chi^2=53.3$, $P<0.0001$) than expected, when compared to the proportion of all UK travellers visiting these destinations.

Conclusion

The study shows the feasibility of incorporating TD in a sentinel scheme and its potential for monitoring secular trends and for helping to characterise population groups or travel destinations associated with higher risk.

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Staphylococcus aureus bacteraemia surveillance in Northern Ireland

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Surveillance of *Staphylococcus aureus* bacteraemias in Northern Ireland began in April 2001 and became a mandatory requirement of Hospital Trusts in April 2002. In addition to mandatory reporting, a growing number of NI Trusts also participate in the European Antimicrobial Resistance Surveillance System (EARSS) [www.earss.rivm.nl]. EARSS links national surveillance networks within Europe, collating data on prevalence and spread of antimicrobial resistance. This voluntary scheme requires the collection of information on all patient episodes of *S. aureus* bacteraemia, both MSSA and MRSA.

By December 2005 eight of the twelve Hospital Trusts in Northern Ireland were submitting data to this scheme, which are primarily forwarded to EARSS as a part of the UK return. In addition to the data collected for EARSS, participating Trusts also supply additional clinical details where possible, providing detail on risk factor information.

Presented here are a summary of the Northern Ireland data to date. This enhanced surveillance to date has shown some differences between MRSA and MSSA isolates including differences in terms of resistance to antibiotics other than methicillin/oxacillin.

As the coverage and completeness of the data received continue to improve, so we are beginning to compile a better picture of *S. aureus* bacteraemias within Northern Ireland.

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Introduction to mandatory MRSA surveillance scheme in Health Protection Agency South East Region

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Aim

The development of an effective web-based reporting system in order to enhance the current Mandatory MRSA Surveillance Scheme.

Methods

The mandatory MRSA surveillance scheme began in April 2001. All 24 NHS Acute Trusts in the South East Region enter data by completing a return form. Trusts are asked to supply the following on a quarterly basis:

- Total number of blood culture sets taken
- Total number of positive blood cultures
- Total number of *Staphylococcus aureus*
- Total number of MRSA bacteraemias

As from 1st April 2005, Trusts were asked to supply their total number of positive MRSA bacteraemias diagnosed on site for every month. The figures are verified on a quarterly basis.

At the request of the Department of Health, the Health Protection Agency developed a web-based system and reporting via this route was mandatory from 1st October 2006.

Results

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

Conclusions

The addition of the web-based surveillance has improved routine reporting significantly and the majority of Trusts in the South East welcomed such an introduction. The new scheme enables Trusts to analyse their MRSA bacteraemias in more detail and contribute to improving their knowledge regarding risk factors associated with such infections.

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Gastro-intestinal infections and Zoonoses

Epidemiology and risk factor analysis of campylobacter and salmonella food poisoning in Norfolk

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Aim

To compare the epidemiology and risk factors of campylobacter and salmonella food poisoning in Norfolk.

Methods

Routinely collected data by the Norfolk Health Protection Unit for the period 2000 to 2004 was retrospectively analysed.

Results

During the study period 4683 cases of campylobacter food poisoning and 920 cases of salmonella food poisoning were reported to the Norfolk Health Protection Unit. This is approximately 90% of total food poisoning cases reported to the unit during that period. The rate of disease was highest in 0-4 years age group for both infections (282.5 for salmonella and 765 for campylobacter). A marked seasonal variation was observed for both infections with a peak for campylobacter infection between 20 to 36 weeks and for salmonella between 28 to 45 weeks.

Risk factor analysis showed that salmonella food poisoning is significantly associated with travel abroad, drinking untreated water and swimming ($P < 0.001$) while campylobacter food poisoning is significantly associated with animal contact and food eaten away from home ($p < 0.001$). The rates of campylobacter infection in Norfolk were well above the national rates for the same period.

Conclusions

Campylobacter rate in Norfolk is higher than national rates. Risk factors for salmonella include travel abroad, swimming and drinking untreated water. Risk factors for campylobacter include contact with animals and food eaten away from home.

Farming is the major occupation in Norfolk and contact with livestock is frequent.

Appropriate education of the population and increasing awareness of risk factors to minimize infection is essential for effective control.

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Two separate outbreaks of *Salmonella* enteritidis phage type 14b food poisoning linked to the consumption of the same type of frozen food

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Aim

To ascertain, using a combination of epidemiological, environmental and microbiological methods of investigation, a possible link between two outbreaks of salmonella food poisoning.

Methods

Case/control studies were carried out on the known at risk populations, environmental investigations took place in the food preparation areas used for the social functions and microbiological examinations were carried out on faecal specimens obtained from cases, environmental swabs and, food specimens when these were available.

Results

In both outbreaks, illness was associated with the consumption of sesame prawn toast (outbreak one; $p < 0.004$, outbreak two; $p < 0.0001$). *Salmonella* enteritidis PT 14b was cultured from the faecal specimens of cases in both outbreaks and from a packet of sesame prawn toast used for the second outbreak function. Molecular typing methods indicated that the salmonella cultures obtained in both outbreaks were indistinguishable from each other and from cultures obtained from imported Spanish eggs in a previous survey. Imported Spanish eggs were used in the manufacture of the sesame prawn toast.

Conclusions

Adequate cooking must take place of raw food products, which should be clearly labelled as such. Manufacturers should consider, when possible, the use of pasteurised egg in the preparation of food products.

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Livestock-related exposures, phage types and haemolytic uraemic syndrome: enhanced surveillance and laboratory investigation of *E. coli* O157 in Scotland, 2004

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Aim

Despite two large foodborne outbreaks, sporadic cases predominate in Scotland and were strongly associated with livestock-related exposures in a previous study. Population-based enhanced surveillance aims to identify and compare exposures and outcomes, such as haemolytic uraemic syndrome (HUS), across all case types.

Methods

HPS obtained detailed standardised datasets for all laboratory-confirmed cases, integrating public health and laboratory data, including direct clinical reports of HUS.

Results

In 2004, 210 cases were reported: 81% were sporadic; 11% developed HUS; and 11% acquired infection abroad.

Livestock-related exposures were reported for 55% of cases, including those regularly exposed by living on or next to, or working on, farms or livestock premises (23% of all cases). Other visits to livestock premises (28% of cases) included private or visitor farms, stables, markets, or safari parks; and 25% of cases reported contact with livestock or faeces.

Nine livestock-related cases had private water supplies, sourced from farmland, contaminated with *E. coli* O157; cows grazed by three of the sources. Two further cases water from streams contaminated with *E. coli* O157, where cows drank.

Of 185 UK-acquired cases with available phage type (PT) identifications, PT21/28 accounted for 64%, PT2 for 18% and other PTs for 17%. Livestock-related exposures were more common in cases with PT21/28 (70%) or PT2 (53%), than amongst other PTs (31%) ($\chi^2 = 16.4$, df 2, $P < 0.0005$).

More patients with regular livestock-related exposures developed HUS (19%) than those with one-off or irregular exposures (9%) or no such exposures (7%). Perhaps reflecting small numerical totals for HUS (22 patients), this difference did not reach statistical significance ($\chi^2 = 4.6$, df 2, $P = 0.099$).

Conclusions

Phage type distribution, whilst reflecting the national prevalence of PT21/28, may also reflect exposures. It cannot be assumed that regular exposure to livestock reduces the likelihood of illness progressing to HUS.

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Domestic and travel-related foodborne gastrointestinal illness in a population health survey

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Aim

Routine surveillance data underestimate incidence of gastrointestinal (GI) illness and provide little information on illness related to travel.

Methods

We analysed data from the 1998 Welsh Health Survey to estimate population incidence, and to examine risk factors for domestic and travel-related GI illness and factors associated with consulting a doctor. The survey comprised a self-completed postal questionnaire that was sent to 50,023 adults in Wales (a 2% population sample). It included the question 'Have you had stomach upset with diarrhea in the past 3 months, which you think was due to something you ate?' and whether this occurred at home or abroad.

Results

The response rate was 61.4% and there were 28,423 responses to the GI illness question available for analysis. Reported frequency of foodborne GI illness in the three months before interview was 20.0% (95% confidence interval (CI) 19.5 to 20.4%; equivalent to 0.8 episodes per person-year), including 18.3% (95% CI 17.9 to 18.8%) domestic and 1.6% (95% CI 1.5 to 1.8%) travel-related. In the final model, sex, age group, marital status, self-reported health, long term illness, smoking and alcohol consumption were predictors of domestically-acquired illness, and employment status, self-reported health, smoking and alcohol consumption of travel-related illness. People with travel-related illness (11.9%; 95% CI 9.3 to 15.2%) were less likely to consult than those with domestic illness (16.5%; 95% CI 15.5 to 17.5%).

Conclusions

Foodborne GI illness is common but risk factors for illness and consultation differ for domestic and travel-related illness.

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Risk factors and clinical outcome for ciprofloxacin-resistant campylobacter infection

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Aim

Campylobacter is the most common bacterial cause of gastroenteritis in the United Kingdom. Most infections resolve spontaneously, but antibiotic treatment may be required in severe illness and in vulnerable individuals. In recent years, quinolone resistance has emerged as an important problem, often in association with foreign travel. We carried out a study to identify risk factors for resistance and to establish if resistant strains were associated with worse clinical outcome.

Methods

Patients with campylobacter infection diagnosed between Apr 2003 and Mar 2005 were recruited through the Welsh laboratory network into a case-comparison study of patients with antibiotic-resistant isolates (n=145) and those with antibiotic-sensitive isolates (n=411). Patients were interviewed by telephone about risk factors for antibiotic resistance (including recent antibiotic use in patients or household contacts, travel history, food history, and contact with animals) and followed up for six months to compare clinical outcome.

Results

There was one major risk factor for resistant infection, namely recent travel abroad (OR_{adj} 18.0, 95%CI 10.2-31.7). Two countries were associated with higher risk: Spain and India, with travel to Spain accounting for almost half of the travel-related cases. In sub-analyses, drinking still, bottled mineral water (OR_{adj} 4.6, 95%CI 1.0-21.2) and eating eggs (OR_{adj} 3.2, 95%CI 1.1-9.4) were risk factors for ciprofloxacin-resistant infection in travel-related cases, whilst drinking sparkling, bottled mineral water (OR_{adj} 2.5, 95%CI 1.3-4.9) was a risk factor for domestically-acquired ciprofloxacin-resistant infection. There was no difference in severity or duration of acute illness, nor in frequency of symptoms at 3-month and 6-month follow-up.

Conclusion

Travel abroad remains the single most important risk factor. Chicken was not a source of domestically-acquired ciprofloxacin-resistant infection, but the role of bottled water as a source of both domestic and travel-related infection needs to be further explored. We did not find any evidence of more severe or prolonged illness in patients with resistant infection.

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A molecular epidemiological approach to evaluating the zoonotic potential of *Cryptosporidium parvum* isolates

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Aim

To investigate the association between *Cryptosporidium parvum* subtypes in human cases of cryptosporidiosis and risk factors for exposure

Methods

Long term enhanced molecular surveillance has shown that human cases of cryptosporidiosis are mainly caused by either *C. parvum* or *C. hominis*. While *C. hominis* is acquired from other people or human sewage, *C. parvum* has a wide range of animal hosts including humans and so the source of infection is often unclear. *C. parvum* isolates, identified by polymerase chain reaction-restriction fragment length polymorphisms in sporadic cases recruited to a case control study, were further investigated at three micro-satellite DNA markers. Subtypes were identified on the basis of marker allele fragment size distribution and compared with detailed exposure history gathered from the patients. Subtypes were grouped by hierarchical cluster analysis to further investigate associations with exposure data.

Results

Cluster 1 was significantly associated with a history of animal contact while clusters 2 and 3 were exclusive to patients who did not report animal contact. Within cluster 1, one allele was significantly associated with touching farmed animals. Cluster 1 was also significantly associated with living in a rural area.

Conclusions

This study provides further evidence of human-adapted strains of *C. parvum* and offers a method to distinguish these from zoonotic strains. Furthermore, investigation of one marker can provide a tool for classifying a strain as zoonotic or human.

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Exceeding the guidelines

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Aim

- (i) To present a case for enhancing existing guidelines for Viral Gastroenteritis, particularly outbreaks, and to generate discussion.

- (ii) To recommend that there is a joint approach to training, knowledge levels and a consistency of approach between staff of the HPA, Public Health Departments and Environmental Health Departments

Methods

Descriptive: four outbreaks are briefly described and the experiences from these are drawn into factors that helped or hindered efficient control and these will be presented.

Results

Initial responders often did not appreciate the need for stringent cleaning and control measures, nor did many of them know what these should be. A difference to the speed of control was found when the knowledge level was addressed as this led to change in practice.

One outbreak was unique in its potential to spread from a commercially run nursery to a major hospital where exclusions were recommended in excess of current guidelines (CDR) with no reports of infection being transmitted.

Conclusions

There seems to be merit in dealing with viral outbreaks as early as possible with stringent cleaning and exclusion measures. The numbers of outbreaks are small and we feel that it would be worthwhile to collate the experiences from other outbreaks of viral gastroenteritis with a view to informing policy.

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Late Breakers/Hot Topics

Audit and questionnaire survey of public health on call for health protection in London and the Eastern and the south east regions

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Aim

To explore and audit issues relating to health protection on call in London and the Eastern and south east regions in light of the Faculty of Public Health's consultation regarding on call policy

Methods

E mail questionnaire distributed via the local HPA audit coordinator and local rota organisers to individuals participating in health protection out of hours on call rotas in London, Eastern and south east regions. Analysis of results using Excel and comparison of results against set standards.

Results

Only two of the set standards were met. The questionnaire revealed substantial disparity between responses from individuals in the different regions especially in response to people's knowledge about how their local rota works, its requirements and responses to an emergency requiring health protection input.

Conclusions

There is inconsistency in requirements for on call both across and within the regions. There is also a lack of knowledge regarding indemnification for on call and local procedures and protocol. These results indicate that there should be standardisation of requirements for health protection on call for public health professionals and the findings of this project will contribute to this process.

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Audit of data collected on enquiry forms – an aspect of clinical governance

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Aim

Accurate recording of enquiries received by the Essex Health Protection Unit, advice given and action taken is a core component of Clinical Governance.

Prior to October 2005, all enquiries data were recorded on an enquiry proforma and entered onto an Access database. To conform to Information Quality Assurance, Caldicott Guardianship and security policies, we decided to audit the completeness of data capture on the original enquiry sheets.

Method

A random sample of 10% of all enquiries in 2004 was selected. 98% of those were located. One in three sheets was audited for quality and completeness of data in all 21 data item fields.

Result

Most of the 21 data fields were shown to have been completed. However, items such as 'Time of Enquiry', 'Notifier's Address', 'Name of Patient', whether enquiry related to an outbreak and whether out of hours, were not always filled in on between 1% and 30% of occasions.

Conclusion

This audit highlighted some gaps in data collection. As a result, the Enquiry Form was completely reviewed and amended. This is now entered on a Web Surveillance System that incorporates an Enquiry and Outbreak module. The enhanced Enquiry form coupled with the surveillance system confers the following benefits:

- 1) Notifiable disease cases can be mapped in real time
- 2) Cases linked to outbreaks can be tracked through the system
- 3) Time spent on dealing with enquiries can be accurately measured to allow better resource allocation.
- 4) The system allows a complete audit trail as to when and by whom data was added or adjusted
- 5) Reports can be generated by category of enquiries and response by time period, outbreak report, dynamic reports of outstanding enquiries and epidemiological mapping of diseases
- 6) This will contribute to more complete information available for the Annual and Regional Reports.

Preliminary evaluation of mobile targeted digital chest radiography in the control of tuberculosis among high-risk groups

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Aim

Effective TB control is founded on early identification and complete treatment of active cases. TB among high-risk hard to engage groups such as prisoners, homeless individuals, problem drug users and refugees measurably affects the occurrence of disease in low incidence countries. An active case finding pilot in London among high-risk populations using a digital mobile X-ray unit (MXU) is extending TB control into congregate settings, such as prisons and homeless hostels, where onward transmission is most likely to occur. Active case finding among high-risk groups aims to promote the early identification of cases and reduce onward transmission. We present results of the preliminary evaluation of the first six months of the MXU pilot.

Methods

Active case finding was evaluated by ascertaining the total number of subjects screened, TB patients identified, the proportion with infectious TB and those that have early pre-symptomatic disease. The cost per case detected was also estimated.


Results

A total of 7426 people were screened. There were 57 referrals for possible TB, with the diagnosis of 15 new active cases giving a detection rate of 202 per 100,000 (95% CI - 113 to 333 per 100,000). The majority of cases were found among prisoners or the homeless population. A total of 10 cases were laboratory confirmed, of which two had drug resistant disease. 36 referrals were also made for abnormal chest X-rays not suggestive of TB. The cost per TB case detected was £8,000.

Conclusions

The MXU is capable of identifying cases of active TB that were not in contact with the health service potentially reducing onward transmission. A case control study, mathematical and economic models will be used to assess the effectiveness and cost effectiveness of the intervention over a two year period.

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A case of Legionnaires' disease associated with a concrete batcher process on a construction site

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Untreated warm water and high pressure aerosols are high risk factors for causing Legionnaires' disease (LD). Aggregate stored outside in winter in the UK is too cold for production of some concrete mixes. We report the investigation of a case of LD in a construction site worker employed in close proximity to the concrete batching plant where warm water, in the region of 30°C, was added to a concrete batcher to facilitate the chemical process during cold weather. The untreated warm water source was a storage tank with borehole water heated by an adjacent boiler.

The investigators also discovered that a powered jet-washer was connected into the warm water supply, and was used to hose down and remove concrete from the batcher plant, surrounding areas and lorries. Water from the storage tank, associated pipework and jet washer had high levels of *Legionella pneumophila* serogroup 1 (SG1) ($>10^5$ cfu /L). Isolates obtained from the patient and the environmental sources were found to be indistinguishable by further typing as *L.pneumophila* SG1, mAb subgroup 'Knoxville', SBT 3, 10, 1, 10, 14, 9.

Conclusions

This is the first time that a case of LD has been associated with concrete production on a construction site. The site workers believe that similar systems operate elsewhere. This case therefore highlights the need for a thorough risk assessment of all systems using water on construction sites worldwide and systems for management and control of warm water used in similar processes.

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Speakers and Chairpersons

Charlotte Anderson

Charlotte Anderson graduated in 2003 from Edinburgh University with a BSc (Hons) in Pharmacology. Charlotte joined the HPA Centre for Infections in September 2003, and is currently working as a scientist in the Tuberculosis Section.

Eleanor Anderson

I am a final year SpR in Public Health with an interest in Health Protection. I worked for a number of years as a principal in General Practice, mostly in a deprived area in the East End of Glasgow before moving into Public Health. I have an interest in Hepatitis C, particularly case finding among Scotland's large former injector population; this presentation relates to the work I did in this area for the Part 2.

Ashis Banerjee

Ashis Banerjee is a final year Specialist Registrar in Public Health in the West Midlands training scheme. He is currently based in Redditch and Bromsgrove PCT.

Louise Bishop

Louise Bishop is the Epidemiology Scientist for healthcare-associated infections at HPA London. Previously she was at the Healthcare-Associated Infection and Antimicrobial Resistance Department, Centre for Infections, and last year completed a part-time MSc in Epidemiology at the London School of Hygiene and Tropical Medicine.

Maeve Burke

Maeve Burke graduated from Trinity College Dublin. She trained in General Practice in Cardiff, Wales. She managed a health screening service for asylum seekers in Cork city from 2001-5. She is currently working in communicable disease control in the Department of Public Health in Cork, Ireland.

Dolors Carnicer-Pont

After graduating as an MD, I worked for 10 years in the Catalan Department of Health. I spent another 10 years with the NGO Medecins Sans Frontieres mostly involved in prevention and response activities in emergency context (displaced, refugees and epidemics) and working with WHO as a consultant for polio eradication in Africa, India and Pakistan. Thereafter, I was accepted for EPIET (European Programme for Intervention Epidemiology Training) and I am recently working as a locum Consultant of Communicable Disease Control.

Tim Chadborn

Tim Chadborn co-ordinates the Survey of Prevalent HIV Infections Diagnosed (SOPHID) and surveillance of CD4

tests at the national surveillance centre in London. These are used to monitor the prevalence of diagnosed HIV infections, inform funding and cross-charging allocations and monitor levels of immunosuppression. TC has an MSc in the Control of Infectious Diseases and is currently undertaking a PhD in HIV epidemiology in the UK.

Peter L Chiodini

Peter Chiodini is Consultant Parasitologist at the Hospital for Tropical Diseases, Honorary Professor at the London School of Hygiene & Tropical Medicine and Director of the Health Protection Agency Malaria Reference Laboratory and the HPA Parasitology Reference Laboratory. Professor Chiodini organises the UK National External Quality Assessment Scheme for Parasitology, is a member of the HPA Advisory Committee on Malaria Prevention in Travellers and advises the National Blood Service on the prevention of transfusion-transmitted parasitic infections. His research interests include malaria and new diagnostic methods for parasitic infections.

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). In April 2004 he also took up responsibility as Consultant Epidemiologist in healthcare associated infection.

Natasha Crowcroft

Natasha Crowcroft has worked in the Immunisation Department of the Centre for Infections since 2000. She trained in Public Health Medicine in the UK from a background in general medicine and microbiology, and was a Fellow in the European Programme for Intervention Epidemiology Training (EPIET) in Brussels, Belgium from 1995-97. Her current responsibilities include surveillance of vaccine preventable diseases and vaccination coverage, immunisation advice for public health professionals, assistance in outbreaks of vaccine preventable diseases, research and training in immunisation.

Lynsey Emmett

Lynsey Emmett joined the Health Protection Agency in 2004 after completing an MSc in Epidemiology, Evolution

and Control at Oxford University and a 3 year research position at St. George's Hospital Medical School in London. She initially worked on the Chlamydia Recall Study which looked into the incidence and re-infection rates of genital chlamydial infection among young women in two settings in England and is currently a scientist on the National Chlamydia Screening Programme.

Meirion R Evans

Meirion Evans is a Regional Epidemiologist at the Communicable Disease Surveillance Centre, National Public Health Service for Wales and Senior Lecturer, Department of Epidemiology, Statistics and Public Health, Cardiff University.

Dr Evans trained in public health medicine in the West Midlands. He worked as a consultant in communicable disease control with Bro Taf Health Authority for 10 years before taking up his present post at the Communicable Disease Surveillance Centre in Cardiff in 1999.

His research interests include food-borne disease, child and adult immunisation and sexually transmitted infections.

Rose Fitzgerald

Rose Fitzgerald qualified from University College Dublin in 1986. She has worked as a Specialist in Public Health Medicine in Limerick since 2001 having responsibility for Infectious Diseases and Immunisation in the Mid West Region.

Fidelma Fitzpatrick

Fidelma Fitzpatrick is a consultant clinical microbiologist at St. Vincents University Hospital and the Health Protection Surveillance Centre, Dublin, Ireland. Her interests included surveillance of hospital-acquired infection, antibiotic stewardship and staphylococcal biofilm formation. She graduated in medicine from Trinity College Dublin in 1993. Following general professional training in Internal Medicine and training in clinical microbiology, she obtained her MRCP in 1995 and MRCPATH in 2002. In this presentation, she will describe the challenges and lessons learnt by the national incident team charged with managing the episode of hepatitis B virus reactivation in a dialysis unit.

Clíodhna Foley-Nolan

Dr Foley-Nolan is Director: Human Health and Nutrition with safefood, the Food Safety Promotion Board. Dr Foley-Nolan directs the public health and nutrition functions of the organisation. Dr Foley-Nolan has a medical degree from UCC; a masters in Public Health from UCD and is a fellow of the Faculty of Public Health of the Royal College of Physicians in Ireland. Dr Foley-Nolan has worked at consultant level in public health medicine in the Southern Health Board region, and is a specialist in the areas of health promotion and food safety. Dr Foley-Nolan holds a lecturer post in UCC and is a

trainer and examiner at the Royal College of Physicians in Ireland. Dr. Foley-Nolan is a founder member of the Cork Zoonoses Committee and the Infoscan Infectious Disease Bulletin, both of which were subsequently replicated throughout the country. She has also served on a number of national advisory groups including those on MRSA, the NDSC's Strategy for the Control of Antimicrobial Resistance in Ireland (the NDSC has now changed its name to the HPSC) and the National Lifestyle Surveys for the Health Promotion Unit of the Department of Health and Children. Dr Foley-Nolan is a member of the Board of FSAI and a member of the Veterinary Council of Ireland.

David Forster

David Forster has been Strategic Environmental Planning Strategy Manager for the Environment Agency in the North West since 2003. He currently holds the human health and rural affairs portfolios. Prior to that he was an Environment Manager in both Cheshire and Greater Manchester having transferred into the Environment Agency on its formation in 1996 from Cheshire County Council.

David started his career investigating gas from landfill sites in the late 70's but throughout his 28 years in environment regulation has maintained some say an unhealthy interest in health care waste, having chaired the Clinical Waste Forum for Cheshire, was a member of the National Drug Litter Group, co-authored a guide for staff on the inspection and licensing of healthcare waste facilities and facilitated a secondment to the IPPC Support Unit at John Moore's University, Liverpool. More recently he has been involved in the health impact assessment of the draft NW Regional Spatial Strategy.

Isabelle Giraudon

Isabella Giraudon trained in tropical medicine and community health, and has been working in France and Africa as a nurse on a mother and child health programme as well as HIV infection MTCT (mother to child transmission). After MPH, pharmacoepidemiology studies and work at the French Monitoring Centre for drugs and drug addiction, Isabelle is now an EPIET fellow (European Programme for Intervention Epidemiology Training) in the HPA London Region.

Sally Harcourt

I have worked as an Information Scientist for the HPA since 1997, based in the West Midlands Regional Surveillance Unit. For the last six years I have worked with Dr Gillian Smith and colleagues in the Primary Care Surveillance Team developing national primary care surveillance projects in collaboration with NHS Direct, the Birmingham Research Unit of the RCGP, GPRD and Nottingham University Division of Primary Care.

Aidan Kirkpatrick

Aidan Kirkpatrick has a background in primary care and is currently in his final year of training in public health.

He has recently started a locum consultant appointment at Greater Manchester Health Protection Unit and has a specialist interest in environmental issues.

Lorraine Lighton

Lorraine Lighton was appointed Consultant in Communicable Disease Control for Tameside and Glossop Health Authority (later West Pennine) in 1991 and transferred to Greater Manchester Health Protection Unit with the formation of the Health Protection Agency. She is the North West HPA Sexual Health Lead and chairs the North West Syphilis Group. Other special interests include zoonoses, GI infections and medical ethics and law.

Margie Meltzer

Margie Meltzer qualified at the University of Cape Town in 1971. After spending time at the South African Institute for Medical Research in Johannesburg and the Hammersmith hospital in London she qualified as a histopathologist in 1981. In 1994 she decided to change to Public Health medicine; she was appointed as a CCDC in 2001.

Suzanna Mathew

Suzanna Mathew qualified as a medical doctor from Madras University, India in 1982. After postgraduate training in Community Medicine, she worked in cancer epidemiology, medical education and training, consultancy, and programme management, especially maternal and child health and development programs in the voluntary sector in India. Trained in public health medicine from Trent Region, she has been consultant in communicable disease control for Bradford District (West Yorkshire) from June 2004.

Jim McMenamin

Dr Jim McMenamin is a Consultant Epidemiologist in Immunisation and Respiratory with the Health Protection Scotland (HPS). Jim is a member of the JCVI sub groups on influenza and BCG, HPA TB programme board, the meningococcal and pneumococcal fora and the UK Expert Advisory Group on SARS.

Jim qualified from the University of Glasgow in 1987 and trained in clinical medicine and infectious disease before moving into public health medicine. Jim joined Health Protection Scotland (HPS) from Greater Glasgow NHS Board in October 2003 as Consultant Epidemiologist responsible for respiratory and immunisation issues. He is an Honorary Senior Clinical Lecturer in the University of Glasgow. His special interests include TB, Influenza, Bio-terrorism and the implementation of new surveillance programmes.

Marian McEvoy

Dr Marian McEvoy joined the specialty in 1980. After training in the PHLS she was employed as consultant epidemiologist at CDSC, as regional epidemiologist in north Thames and in various CCDC posts in London

districts. She is currently working as CCDC in Hertfordshire and as interim director of the Beds and Herts HPU.

Dilys Morgan

Dilys Morgan is currently the Director of the Emerging Infections and Zoonoses Department at the Health Protection Agency Centre for Infections, Colindale. She also contributes to the HPA bioterrorism response, including being in-charge of the Deliberate release website. She qualified in Medicine in 1978 and after training as a general practitioner commenced one of several appointments in Africa. She started as an aid worker in the Gambia and after returning to start training in public health medicine and completing her MSc, left again to study the effects of riverine onchocerciasis (river blindness) in Sierra Leone. She returned in 1990 to continue her training in public health and became a Consultant at the PHLS Communicable Disease Surveillance Centre (CDSC) in 1992, when she was in-charge of the investigation and management of outbreaks of infectious disease. She worked for the Medical Research Council from 1995-2001, as a Clinical Epidemiologist in Uganda, where she did major research on the natural history of HIV infection in a rural area. She returned to CDSC in May 2001.

Fortune Ncube

Fortune Ncube is a Consultant Epidemiologist in Public Health Medicine and in Blood-Borne Viruses (BBVs). Fortune has a special interest in the prevention of heterosexual and vertical transmission of HIV and also Hepatitis B and C epidemiology, prevention and management. He now leads on The Unlinked Anonymous Prevalence Monitoring Programme for intravenous drug users and pregnant women, the surveillance of occupational exposure to BBVs in healthcare workers (HCW) and co-ordinates the national antenatal screening monitoring for HIV, hepatitis B, syphilis and rubella. He is the Medical Secretary to the United Kingdom Advisory Panel on HCWs infected with BBVs. He chairs the Advisory Group on surveillance of occupational exposure to BBVs in HCWs. He is a board member and Deputy Chairman of the Board for Mainliners and chairs the National Hepatitis C Resource Centre Medical Advisory Committee.

Kevin Pollcock

For the last four years, I have been co-ordinating the enhanced surveillance of haemolytic uraemic syndrome and other thrombotic microangiopathies in Scotland. I also run research and surveillance projects for *Cryptosporidium* and *Giardia*. Before that, I had a two year post at the University of Glasgow, performing research on vaccine adjuvants and how we can manipulate these to alter the immune response.

Roland Salmon

Roland Salmon is a Consultant Epidemiologist and Director of the National Public Health Service for Wales'

Communicable Disease Surveillance Centre in Cardiff. He qualified in medicine from Saint Bartholomew's Hospital, London and after working in hospital and general practice, trained in public health in the West Midlands. He has worked for CDSC Wales since 1989.

Joyshri Sarangi

Joyshri Sarangi is Consultant in Communicable Disease Control & Health Protection Unit Director in the South West Region. Also Programme Manager for the Health Protection Agency Influenza & Respiratory Virus Programme Board, which plays a key role in the co-ordination of National Contingency Planning for Pandemic Influenza.

Peter Sheridan

Peter is a CCDC in North East and Central London HPU. He qualified at Bristol in 1977 and was a GP in Bedford for 10 years before public health training in North West Thames Region. He worked in general public health including two years as DPH before joining the HPA in 2003.

Robert Smith

A clinical scientist in the Communicable Disease Surveillance Centre (CDSC) of the National Public Health Service (NPHS) for Wales, based in Cardiff. He has been an epidemiologist at CDSC since 1988 and currently leads on the national (England and Wales) surveillance of indigenous and imported zoonotic and parasitic infections.

Richard Smithson

Richard Smithson has been a CCDC in the Western Health and Social Services Board, Northern Ireland, for fifteen years and has always had a particular interest in vaccination and immunisation. He was a member of JCVI for eight years until 2004 and chaired Northern Ireland's vaccination committee from 1999 to 2005.

Ed Smyth

Ed Smyth is the Director of the Healthcare-Associated Infection Surveillance Centre (HISC) in Northern Ireland and is also Infection Prevention & Control Doctor to The Royal Hospitals, Belfast.

Mamoona Tahir

Dr Tahir is a consultant in health protection with the Coventry & Warwickshire Health Protection Unit of the Health Protection Agency. She currently has the responsibility for influenza pandemic planning unit and provides a medical lead for emergency planning issues. She has keen interest in the epidemiology and control of respiratory infections. Before taking up the current post she was a public health trainee with the West Midlands Public Health Training scheme for five years. She gained Masters in Public Health from the University of Birmingham (2000) and Membership of the Faculty of Public Health (UK) in 2003.

Jonathan Van Tam

Jonathan Van Tam graduated in Medicine from the University of Nottingham in 1987. After house jobs he underwent five years of clinical training in Accident & Emergency, Anaesthesia, General and Geriatric Medicine, and Infectious Diseases. He subsequently trained as an academic Public Health Physician at the University of Nottingham Medical School, obtaining EU Specialist Registration in 1995.

He has over 12 years NHS experience and 8 years experience of working for the pharmaceutical industry on influenza vaccines and neuraminidase inhibitors. He has published almost 100 scientific papers and written several chapters in textbooks.

After his time in industry he rejoined the public sector in 2004 as a Consultant Epidemiologist at the Health Protection Agency Centre for Infections in London where he now leads for the agency on pandemic preparedness and planning.

Dirk Werber

Dirk Werber is currently an Epidemiologist, Fellow of the European Training Programme for Intervention Epidemiology (EPIET), based at Communicable Disease Surveillance Centre, National Public Health Service for Wales.

Dr. Werber is a German Veterinarian who trained in epidemiology at the University of Guelph, Ontario, Canada. He worked at the National Institute for Public Health in Germany (Robert Koch-Institut) for five years, before he joined the EPIET programme in 2004.

His research interests include the epidemiology and control of zoonotic diseases with special emphasis on outbreak investigations.



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