The Duty Room update in this edition of Transmit highlights three infectious diseases with important public health consequences: Pertussis (Whooping cough), Scarlet fever and TB. The decision to continue Pertussis vaccination for pregnant women will ensure that infants have protection against Whooping cough. There has been a dramatic increase in the reported cases of Scarlet fever since the start of 2014 compared with previous years. The PHA continues to monitor the epidemiology of Scarlet fever and the number of cases has decreased significantly in May. TB remains an important public health disease with 26 cases reported locally in the first quarter of 2014. Clinicians are reminded that it is important to consider TB as a possible diagnosis especially if their patient has been in a high incidence country.

The HCAI article emphasises the importance of Hand Hygiene and has information from a survey of HCAIs and antimicrobial use in long-term facilities published by the PHA.

As always, we welcome your feedback on the contents of this issue.

Assistant Director of Public Health (Health Protection)
Duty Room Updates

This section of Transmit aims to bring current Public Health issues and events to the attention of our professional colleagues.

Immunisation and Vaccination Workshop

Monday 1st and Tuesday 2nd September 2014
Knockbracken Hall,
Knockbracken Healthcare Park, Belfast

- Primarily aimed at those who are relatively new to vaccination or are taking on new areas of vaccination for the first time.
- Open to staff in Primary Care and those employed by Trusts.
- Attendance is free of charge however it is essential that you register in order to attend.
- Please complete the booking form and return to Siobhan Carlin, PHA (email: siobhan.carlin@hscni.net) by Friday 15th August 2014.
- Places will be awarded on a first come first served basis.

Attendance is free; however it is essential that you register by Friday 15th August 2014 by contacting Siobhan Carlin. Places will be awarded on a first come first served basis.

The Duty Room provides specialist health protection advice, guidance and operational support on all health protection matters.

The Duty Team will respond to all enquiries from health professionals and others, including nursing and residential homes, local councils, community health services (including schools and social services). The new contact details for the Duty Room are:

Health Protection Duty Room
Tel: 0300 555 0119
Fax: 02895 363947
Email: pha.dutyroom@hscni.net
Pertussis Vaccine Issues

Continuation of pertussis vaccination for pregnant women: The positive impact on number of cases in infants and important advice on the new brand of pertussis vaccine for this programme, Boostrix – IPV.

We are continuing to see cases of pertussis in Northern Ireland, though at a lower level than at the peak of the UK wide outbreak which started in 2011. Therefore we are following advice from The Joint Committee on Vaccination and Immunisation (JCVI), who have conducted a thorough evaluation of the pertussis vaccination in pregnant women programme and have concluded that the programme should continue and will be kept under review.

The programme has made a positive impact since its introduction in October 2012 in response to the national pertussis outbreak, with numbers of cases in the most vulnerable groups reducing. Here in Northern Ireland only 3% of cases have been in infants <3months old compared with 22% prior to the vaccination programme. The CMO recently wrote to all GPs, Medical Advisers and Locum GPs and to the Trusts regarding continuation of the programme of pertussis vaccination of pregnant women based on current epidemiology of the disease. CMO letter HSS (MD) 09-2014 available at: http://www.dhsspsni.gov.uk/hss-md-9-2014.pdf

The PHA Duty Room continues to receive calls from Primary Care on the use of pertussis vaccine in pregnancy. Q&As which will be helpful in Primary Care are listed below:

1. **Why is pertussis significant?**
   Pertussis or Whooping Cough is a very infectious disease which causes prolonged bouts of coughing and choking and may lead to breathing difficulties. The disease is spread by coughing and sneezing. Young infants are most likely to develop severe potentially life threatening complications of the disease including; pneumonia, seizure, brain damage, encephalitis and even death. There have been 14 pertussis deaths in infants in England & Wales since the start of the outbreak.

2. **Why is the focus on vaccinating pregnant women?**
   By vaccinating pregnant women the antibodies produced will cross the placenta to the baby and protect the infant in the first weeks of life until the baby can start the routine immunisation programme at 8 weeks old.

3. **Why is vaccination recommended at 28-38 weeks gestation with the optimal time being 28-32 weeks?**
   It takes about 2 weeks from receiving the vaccine for high levels of antibodies to be produced by the mother. Maximum transfer of antibodies across the placenta occurs from 34 weeks gestation. Therefore immunising between 28-38 weeks ensures good overlap between maximal antibody production and trans-placental transfer. The optimal time of immunisation is thought to be weeks 28 to 32.

4. **Does a woman who had the pertussis vaccine as a child or has already had the pertussis infection still require vaccination?**
   Yes, she does require vaccination, as the antibody protection after both vaccination and natural infection is not life-long and declines over time. Therefore the mother’s current level of antibody protection will not be sufficient to pass on to her baby.
5. **Does a woman who has recently been vaccinated still require the pertussis vaccine?**
   Yes she does. Pregnant women who have relatively recently received a pertussis, diphtheria, tetanus and polio containing vaccine should be offered the pertussis vaccine (Boostrix-IPV) but with a minimum gap of one month since the previous vaccine. Please note cumulative doses of vaccine may increase the likelihood of increased injection site reactions and fevers but this risk is outweighed by the benefit to the infant.

6. **What if the woman is pregnant with twins or triplets?**
   A similar amount of antibody is transferred to each baby, so only one dose of Boostrix-IPV is required during each pregnancy.

7. **What if the woman is now over 38 weeks’ gestation?**
   A woman who is now more than 38 weeks gestation should still be offered the vaccine; it can be offered up to the onset of labour.

8. **What if a woman becomes pregnant again while the pertussis vaccination programme is in place?**
   Women who become pregnant during the pertussis immunisation programme should be offered the vaccine during each pregnancy to maximise trans-placental transfer of antibody to that infant.

9. **How long will the infant’s protection last?**
   The immunity provided from vaccinating the mother will protect the infant in the early weeks of life while they are too young to receive their own immunisations. It is important therefore that women are advised to bring their babies for their scheduled routine childhood vaccinations at 8, 12 and 16 weeks in order to develop their own protection against childhood diseases.

10. **Why has the brand of pertussis vaccine changed?**
    The vaccine has changed from Repevax® to Boostrix-IPV®; this is because of a national procurement exercise which resulted in a new supplier for the vaccine for this programme. **NB:** Boostrix-IPV® should not be used for pre-school boosting as it is not licensed for the age at which we routinely schedule pre-school booster vaccination. Repevax® is being phased out; it will be replaced in the pre-school booster programme by Infanrix-IPV®. Repevax® may be used to immunise pregnant women or pre-school children whilst it is still available. **Infanrix-IPV** is not licensed for use in pregnant women.

11. **Is there a vaccine available which only contains pertussis antigens?**
    No, all currently available licensed pertussis vaccines in the UK are part of combined vaccines.

12. **Is it safe to use Boostrix-IPV® in pregnant women?**
    The JCVI have advised the following; there is no evidence of risk to pregnancy or to the infant from inactivated vaccines such as Boostrix-IPV®. Use of Boostrix-IPV® is not contraindicated in pregnancy and does not affect breast feeding. More detailed information can be found in the Green Book or the Boostrix-IPV® SPC. Remember Green Book advice supersedes that found in the Manufacturer’s SPC.

13. **Who should give the vaccine?**
    General Practitioners are asked to vaccinate their pregnant patients within the practice. The HSCB will extend the LES covering this service. The Department is covering the cost of additional vaccine, payments to the GP for immunisation and the data collection fee. **GP practices should order the vaccine from their local Trust pharmacy.**
**Pertussis Vaccination in Pregnancy**

The pertussis vaccination programme is available to all pregnant women from 28 weeks gestation. It aims to protect infants against pertussis until they have completed their primary immunisations.

Despite the pertussis vaccination programme, it appears that some pregnant women are not receiving the vaccine, as half of the mothers of the cases diagnosed so far in 2014 did not receive the vaccine during pregnancy. The reasons for this are unknown, but may include a lack of awareness of the vaccination programme. It is therefore important that antenatal care providers, particularly in Primary Care, educate pregnant women on the importance of receiving the vaccine and signpost them to their GP for vaccine administration.


Ms J Farrell
Health Protection Nurse

Ms M Loughrey
Health Protection Nurse

**Group A Streptococcal infection: Upsurge in Scarlet Fever**

During the first half of 2014 there has been an increase in the number of cases of Scarlet fever reported to the PHA (as compared to previous years). This is consistent with a general rise in Scarlet fever cases across the UK, with Public Health England reporting the highest number of reported cases since 1980.

**Table 1 Number of notified cases Nov 2013 - May 2014**

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The typical presentation of Scarlet fever is a sore throat, fever (usually above 38.5C) and a scarlet rash which follows a day or so later. Other symptoms include headache, nausea/vomiting, tachycardia, lymphadenopathy and a bright red tongue with a ‘strawberry’ appearance. Diagnosis is usually based on clinical assessment and confirmed through laboratory testing.

Ms J Farrell
Health Protection Nurse
The Duty Room regularly receive enquiries about exclusion for both school and nursery school children with a diagnosis of Scarlet fever. As a general rule, children with Scarlet fever should be excluded from nursery while clinically unwell, and until 24 hours after commencing appropriate treatment, as this prevents transmission of the disease to other children.

Scarlet fever is highly contagious and transmission usually occurs via airborne respiratory particles from infected symptomatic and asymptomatic individuals. In addition to good hand hygiene, enhanced environmental cleaning is of the utmost importance in reducing the transmission of Scarlet fever in a School or Nursery setting. ‘Infection Prevention and Control, Best Practice Advice for Nurseries and Childcare Settings’ provides specific cleaning and infection control advice.

**Useful resources**
http://www.publichealth.hscni.net/publications/hand-hygiene-information-professionals
http://www.publichealth.hscni.net/publications/hand-hygiene-information-patients-and-visitors
http://www.publichealth.hscni.net/publications/guidance-infection-control-schools-and-other-childcare-settings-0

**Increase in TB in first quarter of 2014**
There has been an increase in the number of TB cases reported in the first quarter of 2014 (26) compared with the same period last year (18). While cases have been reported across Northern Ireland, the increase has been predominantly in the Belfast Trust and Southern Trust areas.

In total, 74 cases of Tuberculosis were reported in 2013; approximately half affecting the lungs and the remainder involving other parts of the body. We would like to take the opportunity to remind clinicians to consider Tuberculosis as a possible diagnosis if patients present with the following symptoms.

**Signs and symptoms of TB:**
- a persistent cough of more than three weeks that brings up phlegm, which may be bloody
- breathlessness, which is usually mild to begin with and gradually gets worse
- lack of appetite and weight loss
- a high temperature of 38°C (100.4°F) or above
- night sweats
- extreme tiredness or fatigue
- unexplained pain for more than three weeks

Mr E Nancarrow
Health Protection Nurse
Healthcare Associated Infections (HCAI) and Antimicrobial Resistance & Stewardship (AMRS) Update

This issue of Transmit includes an update from the HCAI, IPC & AMRS Team in PHA. We have included a number of items which we hope are of interest to readers. The team regularly reports a range of additional information and surveillance data pertaining to HCAI and AMRS, and we encourage readers to access and review this which is available through the PHA website (http://www.publichealth.hscni.net/).

We continue to work closely with colleagues across Health and Social Care, and we wish to extend our sincere thanks to staff across all laboratories and clinical teams for your continued partnership working with us. As always we are happy to discuss and receive feedback on any of the reports or information summaries that we prepare. I wish to acknowledge and thank members of our HCAI, IPC & AMRS Team in PHA for their continued work in leading our regional surveillance programmes and in preparing the brief updates presented below.

Dr L Geoghegan
Team Lead, HCAI, IPC & AMRS

How clean are your hands?

Hand hygiene is the most important method of preventing and controlling the spread of healthcare associated infections (HCAIs). It is extremely important that all patients, healthcare staff and visitors have clean hands. There are two main ways to decontaminate hands: either washing with soap and fresh running water, or using a hand sanitiser.

WHO SAVE LIVES: Clean Your Hands annual initiative is part of a major global effort led by the World Health Organisation (WHO) to support healthcare workers to improve hand hygiene and thus prevent HCAIs. Preventing the spread of multi-resistant organisms is a global, national and regional priority, and helps to ensure that everyone is protected from the risk of untreatable infections. On 5th May 2014 Public Health Agency (PHA) went to a local Health Centre to remind everyone – patients, staff and members of the public – to clean their hands to ensure that we continue to deliver and receive safe healthcare.

PHA continues to work with Health and Social Care Trusts, General Practices and Independent Sector Nursing and Residential Care Homes to promote best practice in hand hygiene. This year to mark WHO global hand hygiene day (5th May) we took the opportunity to work collaboratively with infection prevention and control colleagues from South Eastern Trust and pharmacy colleagues in the Health & Social Care Board to host an event in Lisburn Health Centre.
An information stand was located in the reception area of the health centre where all visitors were reminded about the importance of good hand hygiene in preventing the spread of multi-resistant organisms. There was an opportunity for all patients, staff and visitors to access information in relation to good hand hygiene practice and the appropriate use of antimicrobials (prudent use of antibiotics).

Further information on hand hygiene and antimicrobial stewardship can be found at:

http://www.publichealth.hscni.net/publications/antibiotics-information-general-public
http://www.publichealth.hscni.net/publications/hand-hygiene-information-professionals
http://www.publichealth.hscni.net/publications/hand-hygiene-information-patients-and-visitors
http://www.who.int/gpsc/5may/en/

Ms C McGeary
Senior Infection Prevention & Control Nurse

Results of HALT 2013 survey published - point-prevalence survey of healthcare-associated infections (HCAIs) and antimicrobial use in long-term care facilities in Northern Ireland

PHA published the results of a point-prevalence survey of healthcare-associated infections (HCAIs) and antimicrobial use in long-term care facilities in Northern Ireland on 6th May. The survey, known as HALT 2013, is part of a larger, similar survey conducted across Europe in 2013.

HCAIs and the consequences of increasing rates of antimicrobial resistance are potentially serious health threats for elderly people, including those living in long-term care facilities. Patients in nursing homes have complicated underlying medical conditions and are from older age groups making them more susceptible to infection. Good infection prevention and control practices and robust antimicrobial stewardship (prudent use of antibiotics) is essential in all healthcare settings to prevent HCAIs and the emergence of antimicrobial resistance.

HALT 2013 was undertaken in Northern Ireland during May 2013 and included 1,503 residents in 42 long-term care facilities (nursing and residential homes). A total of 31 Independent Sector nursing homes (12% of all nursing homes) and 11 HSC Trust-managed residential homes participated in the HALT survey.
The prevalence of HCAIs in nursing homes was 5.5% and in residential homes was 5.0%. This is equivalent to approximately 1 in 20 of residents in a nursing or residential home developing an infection associated with the care facility. The most common infections identified in the survey were urinary tract, respiratory tract and skin and soft tissue infections. At the time of the survey, 10.9% of nursing home residents were receiving antibiotics while the corresponding figure for nursing homes was 7.7% (of all residents).

Findings arising from the HALT 2013 survey in Northern Ireland have been shared with each of the facilities who participated in the survey. Homes will share their results with staff in their own facility and also with external staff providing care for their residents. Each facility is encouraged to use their results to document work they have progressed over recent years to prevent HCAIs and to promote antimicrobial stewardship. Each facility is also encouraged to use their survey findings to plan future improvements.

Three indicators for the care load in Nursing and Residential Homes were explored during this survey [Figure 1].

![Figure 1: Proportion of patients by care load for Nursing and Residential Homes](image)
Nursing Home patients were more likely than Residential Home patients to have a urinary catheter, vascular catheter, pressure sore and other wounds, these differences were not statistically significant [Figure 2].

Figure 2: Comparison of the prevalence of risk factors in Nursing and Residential Homes.

The prevalence of healthcare-associated infections in Nursing Homes was 5.5% (95% CI 4.3 6.9) [Figure 3] and in Residential Homes was 5.0% (95% CI 2.9 - 8.4).

Figure 3: Prevalence of HCAI in Nursing Homes
The prevalence of antimicrobial use in Nursing Homes was 10.9% (95% CI 9.3-12.7) [Figure 4] and in Residential Homes was 7.7% (95% CI 5.0-11.6).

Figure 4: Prevalence of antimicrobial use in Nursing Homes

The full HALT 2013 NI Report and associated appendices can be found at http://www.publichealth.hscni.net/

Dr L Geoghegan
Consultant in Health Protection

Mr G McIlvenny
Surveillance Manager

Carbapenemase-producing Enterobacteriaceae (CPE) Surveillance

Voluntary surveillance of CPEs commenced in January 2012 and is based on CPE isolates reported by Trust and clinical laboratories to PHA through routine risk assessment/case management. The number of CPE isolates in NI has increased from 5 isolates in 2012 to 11 in 2013. Five isolates have been reported so far in 2014 (provisional figures for January - May 2014).
Public Health England (PHE) has published a Toolkit for Acute Trusts to facilitate the early detection, management and control of CPEs. The toolkit can be found at: http://www.hpa.org.uk/Publications/InfectiousDiseases/AntimicrobialAndHealthcareAssociatedInfections/1312Toolkitforcarbapenementero/

Trends in MRSA and Clostridium difficile infections (CDI)

PHA facilitates mandatory surveillance of *S. aureus* and *C. difficile* and the following data has been extracted and validated from data systems across the region

**Staphylococcus aureus (MRSA and MSSA) Blood Stream Infections**

- Since 2007, the rate of MRSA has continued to decline whilst the rate of MSSA has remained relatively static (Figure 2).
- For MRSA, this is an absolute reduction from 229 episodes in 2007 to 74 episodes in 2013 (67.7% reduction).
- For MSSA, this is an absolute reduction from 336 episodes in 2007 to 284 episodes in 2013 (15.5% reduction).
SA surveillance reports are published on a quarterly basis and the most recent report, for Quarter 1 2014, can be found at: [http://www.publichealthagency.org/directorate-public-health/health-protection/healthcare-associated-infections](http://www.publichealthagency.org/directorate-public-health/health-protection/healthcare-associated-infections).

Figure 2: MSSA and MRSA patient episode rates in Northern Ireland by year, January 2007 - December 2013.

**Clostridium difficile Infections (CDI)**

- The number of CDI in inpatients aged 65 years and over continues to decrease from 997 episodes in 2006 to 268 episodes in 2013 (73.1% reduction; Figure 3).

- Over the same time period the number of community specimens increased from 147 episodes to 172 episodes (17% increase; Figure 3).

- The proportion of CDI in individuals aged 65 years and over who were identified in community settings has therefore increased from 12.8% in 2007 to 39.1% in 2013 (Figure 3).

- Further information on CDI cases aged 2 years and over and on ribotype

Bacteraemia (Blood Stream) Surveillance

Surveillance of blood stream infections (BSI) reported by each clinical laboratory in NI is undertaken to provide information on the burden of serious infections within each Trust. From June 2014, the top-10 bacteraemia tables and charts will be issued on a quarterly basis and the Blood Culture tables will continue to be published twice yearly.

Surveillance data including graphs on *E.coli* infections and tables reporting positive blood cultures can be found at: [http://www.publichealth.hscni.net/directorate-public-health/health-protection/healthcare-associated-infections-antimicrobial-resistance](http://www.publichealth.hscni.net/directorate-public-health/health-protection/healthcare-associated-infections-antimicrobial-resistance)

Pseudomonas Surveillance Programme

A surveillance programme capturing *Pseudomonas* detections across augmented clinical care settings commenced 28th January 2013\(^1\).

Since programme commencement a total of 59 reports of *Pseudomonas* have been reported (up to 30\(^{th}\) April 2014). This includes:

- 20 neonates colonised in neonatal units (representing 35 colonisations);
- There have been no infections reported from neonatal units;
- 39 infections from adult augmented care settings (35 have been *P. aeruginosa*).

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\(^1\) The Regulation and Quality Improvement Independent Review of Incidents of Pseudomonas aeruginosa infection in Neonatal units in Northern Ireland. Final Report. 31 May 2012.
PHA Web Links to Surveillance Data

Surveillance data on the main topics of Public Health interest are available through the following web links:

**Notifications of Infectious Diseases:**

**Group B Streptococcus:**
http://www.publichealth.hscni.net/directorate-public-health/health-protection/group-b-streptococcus

**Vaccination coverage:**
http://www.publichealthagency.org/directorate-public-health/health-protection/vaccination-coverage

**Avian Influenza:**

**Brucellosis:**

**Gastrointestinal infections:**

**Hepatitis:**
http://www.publichealthagency.org/directorate-public-health/hepatitis

**Healthcare Associated Infections:**

**Meningococcal disease:**

**Respiratory infections:**

**Sexually transmitted infections:**

**Tuberculosis:**
http://www.publichealthagency.org/directorate-public-health/health-protection/tuberculosis
DHSSPS Web Links

CMO Letters and Urgent Communications relevant to Health Protection, and issued in the three months preceding publication of this edition of Transmit, are accessible through the following web links:

**CO Poisoning**

We welcome your feedback on the content of Transmit.
Please feel free to contact emma.walker@hscni.net with your suggestions or articles that you would like to see included.