

# news release

## First Annual Surveillance Report of Healthcare Associated Infection in Scotland

Health Protection Scotland (HPS) publishes today the first annual report on the surveillance of Healthcare Associated Infection (HAI) in Scotland covering the period January – December 2009. The aim of the report is to identify key information on HAI in Scotland, demonstrate the burden of infection, trends in infection incidence, share supplementary epidemiological and microbiological data from the national reference laboratories and identify future priorities.

Written as an annual stocktake of the epidemiology of HAI in Scotland, and supplementing the routine quarterly reports of mandatory surveillance HPS also produces on *Staphylococcus aureus* bacteraemias, *Clostridium difficile* infection and surgical site infections, the report also includes intelligence from the national reference laboratories in Scotland.

### **Staphylococcus aureus infection**

During 2009 there were 2046 cases of *Staphylococcus aureus* bacteraemia (the presence of bacteria in the bloodstream) in NHS Scotland. A quarter of these were MRSA (n=533) and the remaining were MSSA (n=1513). A significant year on year reduction in MSSA and MRSA bacteraemia rates of 6.1% has been observed since 2005. MRSA bacteraemia has reduced year on year by 14.5% and MSSA by 1.7%. The majority of MRSA isolates (81%) typed by the Scottish MRSA reference laboratory, as part of the snapshot programme in the last year, were attributable to the epidemic strain EMRSA-15.

### **Clostridium difficile infection**

During 2009, *Clostridium difficile* infection (CDI) surveillance in NHS Scotland identified 3625 cases in those aged 65 years and over. There was a significant decrease in the rates of CDI (42%) in the last year. Data from the CDI reference laboratory in Scotland indicate that the most common ribotypes identified in the snapshot study were ribotype106 (22%), 001 (18%) and 027 (13%).

### **Surgical site infection**

Surgical site infection (SSI) surveillance in two categories of surgery (hip arthroplasty and caesarean section - which are mandatory in NHS Scotland) identified 745 infections in the last year (150 and 595 respectively). These data from Scotland include information on infections occurring after discharge from hospital, which is an increasingly important aspect of monitoring, as length of stay in hospital is reducing over time. The introduction of readmission surveillance until day 30 post operatively for hip arthroplasty has resulted in a higher proportion of SSIs being detected following discharge from hospital (50.0%). From April to December 2009, the proportion of caesarean section SSI detected by post discharge surveillance to day 10, not including in patient infections, was 83.8%. Overall rates of infection in both these categories of surgery have significantly reduced since 2003 but have remained relatively stable over the last two years of reporting, 2007-2009.

Professor Jacqui Reilly, Head of the Healthcare Associated Infection and Infection Control Group at Health Protection Scotland, said “This report demonstrates that real inroads have been made to reducing healthcare associated infection in NHSScotland, however there is still a substantial burden of these infections occurring every year in healthcare. Efforts should continue to focus on preventing and controlling these infections to the irreducible minimum. These surveillance data form part of the HPS health protection programmes, which are focussed on supporting NHS boards to reduce these healthcare associated infections. HPS will continue to work with the NHS boards, and other key stakeholders, to deliver these programmes in order to minimise the risk of infection in healthcare in Scotland.”

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#### Notes to the Editor

1. Health Protection Scotland (HPS) is a division of NHS National Services Scotland and provides expert advice, information and support on health protection issues for Scotland.
2. This report is available from the HPS website (<http://www.hps.scot.nhs.uk/haic/publicationsdetail.aspx?id=44385>)
3. The latest quarterly reports for *Staphylococcus aureus* bacteraemias and *Clostridium difficile* infections and annual report for surgical site infection are available from the HPS website
  - Quarterly report on *Staphylococcus aureus* bacteraemias in Scotland October – December 2009  
<http://www.hps.scot.nhs.uk/haic/sshaip/publicationsdetail.aspx?id=30248>
  - Quarterly report on the Surveillance of *Clostridium difficile* infection in Scotland, October – December 2009  
<http://www.hps.scot.nhs.uk/haic/sshaip/clostridiumdifficile.aspx#quarter>
  - Surveillance of surgical site infection: 2009 Annual Report. For procedures carried out from 1 January 2003 - 31 December 2008  
<http://www.hps.scot.nhs.uk/haic/sshaip/publicationsdetail.aspx?id=41967>

#### Further information

#### What is *Staphylococcus aureus* bacteraemia?

*Staphylococcus aureus* is a bacterium that is a common coloniser of human skin and mucosa. *Staphylococcus aureus* can cause disease, particularly if there is an opportunity for the bacteria to enter the body. Illnesses such as skin and wound infections, urinary tract infections, pneumonia and bacteraemia (blood stream infection) may then develop. Most strains of this bacterium are sensitive to

many antibiotics, and infections can be effectively treated. Some *Staphylococcus aureus* bacteria are resistant to the antibiotic meticillin, termed meticillin resistant *Staphylococcus aureus* (MRSA).

**What is reported by the mandatory *Staphylococcus aureus* bacteraemia surveillance system?**

The mandatory *Staphylococcus aureus* bacteraemia surveillance system reports all new episodes of *Staphylococcus aureus* bacteraemia (meticillin resistant and meticillin sensitive) occurring in acute and non-acute hospitals and in the community.

**What is the MRSA snapshot programme?**

The MRSA snapshot programme is a voluntary representative surveillance system for the collection of MRSA isolates from all body sites. Scottish diagnostic microbiology laboratories are allocated a one week period four times throughout a year when all new isolates of MRSA are sent to the SMRSARL for antimicrobial susceptibility testing, typing and toxin production (including Panton Valentine Leukocidin (PVL)). This programme supports the mandatory *S. aureus* bacteraemia programme by providing additional epidemiological information on strain typing, toxin production and antimicrobial resistance.

**What is *Clostridium difficile* Infection (CDI)?**

The term ' *Clostridium difficile* Infection' (CDI) covers a broad spectrum of disease ranging from mild diarrhoea to severe disease, including colitis, pseudomembranous colitis (PMC) and toxic megacolon that can result in gut perforation. Furthermore, severe cases of CDI can be fatal.

Infection with *C. difficile* is considered a leading cause of diarrhoea in hospitals and other healthcare institutions. Treatment with broad-spectrum antibiotics or invasive surgical procedures, which disturb the normal intestinal flora, can lead to overgrowth of *C. difficile*, resulting in either asymptomatic colonisation or infection. Typical clinical signs of CDI include abdominal cramps, profuse diarrhoea, the passage of mucoid greenish foul-smelling watery stools, low-grade fever and leukocytosis.

**What is reported by the mandatory CDI surveillance system?**

The mandatory CDI surveillance system reports all new identified cases of CDI in persons aged 65 years and over in all healthcare settings, including acute and non-acute hospitals and general practices. The system was introduced in October 2006 across all NHS boards in Scotland. From April 2009, the surveillance was expanded to include persons in the age group 15-64 years old.

Further characterisation (typing) of the bacterial strains by the method PCR ribotyping is carried out when outbreaks are suspected or when patients are severely ill from CDI to understand the epidemiology of *C. difficile*. This work is carried out by the Scottish Salmonella Shigella and *Clostridium difficile* Reference Laboratory (SSSCDRL).

**What is the *C. difficile* snapshot programme?**

The *C. difficile* snapshot programme is an additional typing programme run by SSSCDRL that describes a representative sample of all identified CDI cases in all NHS boards on a quarterly basis. By collecting and typing bacterial strains from a cross-section of all CDI cases a more precise estimate of the overall distribution of ribotypes can be obtained as cases of both mild, moderate and severe disease are included in this programme.

**What is a Surgical Site Infection (SSI)?**

A surgical site infection occurs when micro-organisms enter a surgical wound and cause infection. The majority of SSI are superficial and involve the skin only. The remaining infections are more serious and can involve tissues under the skin, organs, or implanted material.

**What is reported by the mandatory SSI surveillance system?**

Mandatory surveillance of hip arthroplasty, inclusive of readmission for SSI to day 30 post operatively and caesarean section, inclusive of community midwife follow up to day 10 post operatively is collected in all NHS boards and reported by HPS.