

EXECUTIVE SUMMARY

Healthcare Associated Infections (HAI) are infections which are not present at the time the patient's healthcare begins, but which arise afterwards. There is evidence from several countries that HAIs are avoidable (1, 2) and costly to the health service and to patients (3). HAIs are also a source of discomfort, disability and distress to the individuals affected.

Health Protection Scotland (HPS) was commissioned by the Scottish Executive Health Department (SEHD) Healthcare Associated Infection Task Force (HAITF) to develop and document a methodology for establishing the burden of HAI and, using this methodology, to undertake a national survey of healthcare associated infection (HAI) in Scotland.

The survey of 13754 inpatients took place from October 2005 to October 2006. The hospitals surveyed included all acute hospitals in Scotland and a representative sample of non-acute hospitals in Scotland. This document reports the results of this first National Prevalence Survey of HAI in acute and non-acute hospitals in Scotland.

The results indicate that the overall prevalence was 9.5% (95%CI 8.8-10.2) for acute hospitals and 7.3% (95%CI 6.0-8.6) for non-acute hospitals.

The highest prevalence of HAI in acute hospital inpatients was found in the specialties; Care of the Elderly (11.9%), Surgery (11.2%), Medicine (9.6%) and Orthopaedics (9.2%). The lowest prevalence was found in obstetrics (0.9%)

The most common types of HAI in acute hospital inpatients were: Urinary Tract Infections (17.9%) (of all HAI), Surgical Site Infections (15.9%) and Gastrointestinal Infections (15.4%). The most frequently occurring organisms responsible for HAI where these data were available were *Staphylococcus aureus* (n=141) (of which Meticillin Resistant *Staphylococcus aureus* (MRSA) made 93 cases and Meticillin Sensitive *Staphylococcus aureus* (MSSA) (n=48)) and *Clostridium difficile* (n=95).

Most prevalence surveys concentrate on a subset of HAI types these often include the four HAI types: pneumonias, urinary tract infections, surgical site infections and blood stream infections. This survey found an overall prevalence in these infection types of 5%. However this survey also found that these types of HAI were not the most common and accounted for only about half of all the HAI identified.

In non-acute hospitals one in ten inpatients in the two specialties (combined), Medicine (11.4%) and Care of the Elderly (7.8%) were found to have a HAI and one in twenty inpatients in the Psychiatry specialty (5.0%) was found to have a HAI.

In non-acute hospital patients Urinary Tract Infections were frequent (28.1% of all HAI), but as frequent in non-acute hospitals were Skin and Soft Tissue Infection;

(26.8% of all HAI), combined these two HAI types affected four percent of all the inpatients in non-acute hospitals.

The most common organism recorded non-acute hospitals where these data were available was *Staphylococcus aureus* (n=15), of which approximately a third were MRSA (n=6). Almost all of the *Clostridium difficile* (n=13) (92%) infections were found in patients in the Care of the Elderly and General Medicine specialties.

The additional Length Of Stay (LOS) associated with HAI in acute hospitals ranged from 3.2 days in Obstetrics to 13.7 days in Care of the Elderly. Patients with HAI have a LOS 70% greater than patients without.

Costs of HAI in Scotland were estimated to be £183 million per year. The cost of HAI in individual specialties ranges from £2 million per year (Obstetrics and Urology) to £49 million (Medicine). Focussing on priority areas could make significant cost savings. If a third of all HAI were prevented, a £55 million cost saving could be made.

Priority areas for future targeted incidence surveillance are: Catheter Associated Urinary Tract Infection (CAUTI), Surgical Site Infection (SSI), Gastro Intestinal infection (GI) specifically (*C.difficile*), skin and soft tissue (SST) (related to Peripheral vascular catheters (PVCs) and Central Vascular Catheters (CVCs)), and Blood stream infections (relating to CVCs). Specialty specific prevalence surveillance should be considered with regard to the above noted targeted areas in medicine and care of the elderly. Special studies on HAI attributed morbidity and mortality should be undertaken in Scotland.

The results of the survey provide the SEHD with baseline information on the prevalence of HAI in Scotland, and can be used as a basis for developing national policy and local HAI prevention and control strategies.

The rigorous methodology developed for this survey can be used at intervals to evaluate trends in HAI, locally and nationally. This methodology is available as Volume 2: Protocol for NHS Scotland National HAI Prevalence Survey (Separate Document).