

Practice Forum

Infection Control Surveillance in Östergötland, Sweden

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Int J Infect Control 2006, 2:1

Available from: <http://www.ijic.info>

In Östergötland, a county in the south-east area of Sweden, surveillance data on hospital acquired infections (HAIs) has been collected since 2000. The aim was to establish a register to be used for HAI prevention. It has been estimated that in Sweden, with a population of 9 million inhabitants, approximately 140,000 patients get HAI every year with a calculated cost of 400 million Euro (October 2005).^{1,2,3}

We perform surveillance for these infections; the staff of the ward units at three hospitals register occurrence of key infections and infections with specific relevance to the different units. The key infections are urinary tract infection, bloodstream infection and *Clostridium difficile* associated diarrhoea. Clinic-specific infections recorded are ventilator-associated pneumonia, surgical site infection or meningitis.

The staff nurses on each unit continuously list on a form and enter data into a computer programme for HAI surveillance (Synergi, developed by Pride ASA, Norway. www.synergi.com). Registered data are patient identity, date of first appearance of symptoms (if known), date of admission, HAI diagnosis, date of surgery (if the patient had an operation), and date when antibiotic treatment was started. The form, as well as the computer programme, is easy to use; an important matter when ward unit staff documents HAI and retrieves results on their own. On the forms there are definitions and information about which HAI diagnosis should be listed.

The staff nurses also retrieve results for their unit. Spreadsheet diagrams make it easy to see trends, i.e., which infections dominate, and recent changes in infection rates. Results are discussed at personnel meetings. The staff participates in analysing results and in continued efforts to improve routines for raising the quality of hospital care. Co-operation between the units and the Infection Control

Unit is important, especially during the start-up period. The Infection Control Unit has authority to see results for all ward units in the computer programme.

In addition to the permanent infection control staff in the county, three IC nurses – one at each hospital – was employed for a three-year program introduction period. The purpose for these IC nurses has been to educate the ward unit staff in HAI definitions, documentation, computer programme, how to follow up, analyse and take measures to decrease infections. The ward units have been introduced to the surveillance system individually. After an introduction period, the units have gradually taken over most of the HAI surveillance activities. In 2004 a decision was made by the Health Care Direction that surveillance would be permanent in our county. One of the extra IC nurses is now employed as a surveillance contact person for all three hospitals.

The outcome of regular analysis is important. Since the start, the statistical results have encouraged several initiatives for preventing or reducing HAI occurrence, for example:

- Providing information about Basic Hospital Hygiene Guidelines (hand hygiene, use of gloves, gown/plastic apron and facial splash barrier) to health care workers.
- Teaching information about guidelines for urinary catheter care and peripheral intravenous cannula (PIV) care.
- Using prevalence surveillance, following-up PIV time in situ.
- Educating staff in using safe techniques for suctioning of endotracheal tubes.
- Sharing the importance of compliance to guidelines has frequently been discussed.



The surveillance itself, knowledge of the results and presence of IC nurses have increased the motivation and wish to improve health care quality. It has been our experience that infection control surveillance has raised the awareness of hospital hygiene issues. There have also been challenges when introducing the HAI surveillance system. Documentation of HAI became the nurses' responsibility and sometimes there have been objections to this additional task. Therefore, the main goal for the Infection Control Unit is to increase the staff's motivation by providing information about the purpose of the program and how the results can be used to improve patient care.

Working together, the infection control team and the units have identified many new opportunities to improve the level of knowledge and compliance with recommended infection prevention and control methods. The primary purpose has not been to get scientifically correct results but rather to obtain data that demonstrate trends.

Statistical results from several ward units show trends with decreasing HAI occurrence of one or several infections. It has been our assessment that this is an effect of the surveillance program and interventions.

Example: Hospital acquired UTI and bloodstream infection occurrence in a ward unit.

| Number of infections | Catheter- related bloodstream infection | Indwelling urinary catheter- related UTI |
|----------------------|---|--|
| Jan | 0 | 1 |
| Feb | 0 | 0 |
| Mar | 0 | 1 |
| Apr | 0 | 1 |
| May | 0 | 3 |
| June | 0 | 0 |
| July | 0 | 0 |
| Aug | 1 | 1 |
| Sept | 0 | 3 |
| Oct | 0 | 1 |
| Nov | 0 | 1 |
| Dec | 0 | 0 |

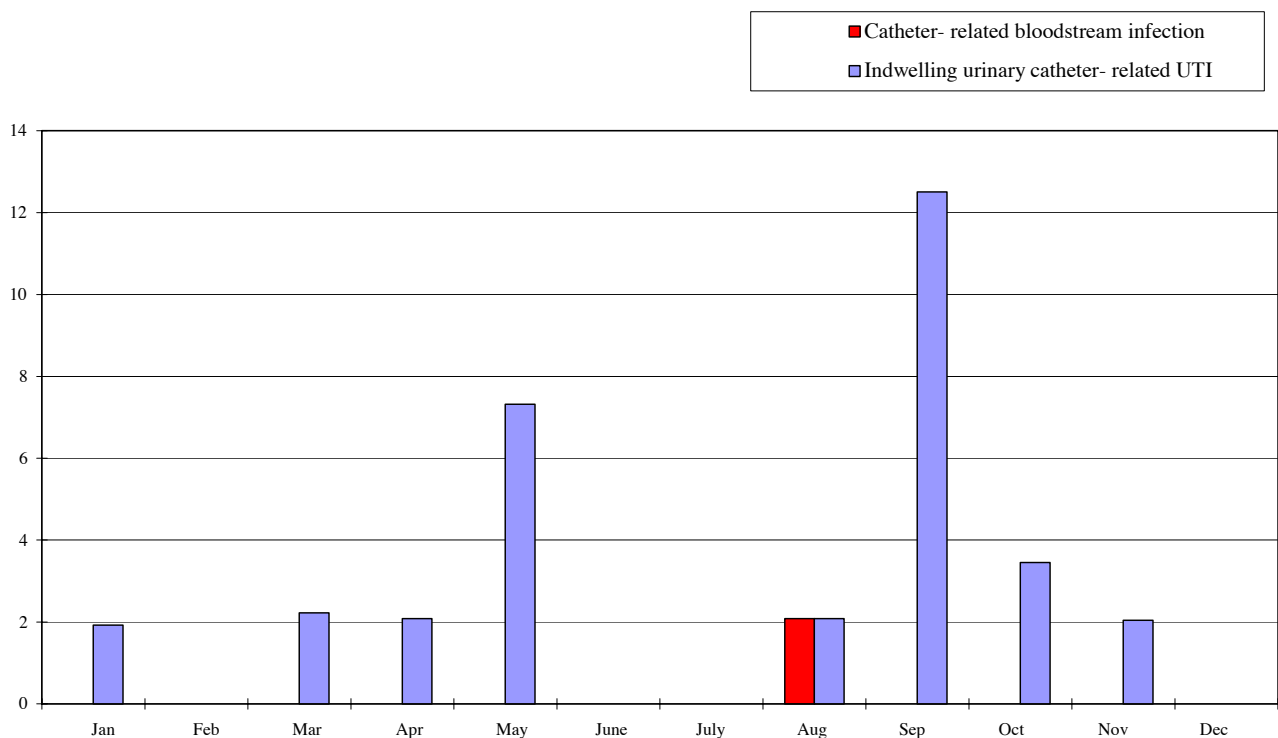


Figure 1: Infection rate (%) in relation to admissions per month 2005-01-01 to 2005-12-31

References

1. The Swedish Association of Local Authorities and Regions (SALAR)
2. The Swedish National Board of Health and Welfare
3. Prevalence surveillance at Huddinge University Hospital, Sweden