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Prevalence Surveys of Healthcare-Associated Infection (HAI) in Southwest Finland 2006–2012

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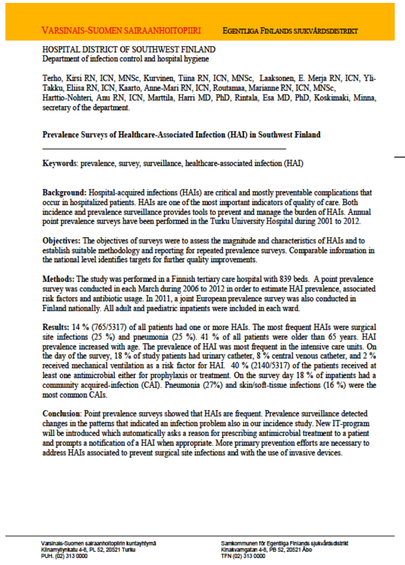

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Prevalence Surveys of Healthcare-Associated Infection (HAI) in Southwest Finland

Keywords: prevalence, survey, surveillance, healthcare-associated infection (HAI)

Background: Hospital-acquired infections (HAIs) are critical and mostly preventable complications that occur in hospitalized patients. HAIs are one of the most important indicators of quality of care. Both incidence and prevalence surveillance provides tools to prevent and manage the burden of HAIs. Annual point prevalence surveys have been performed in the Turku University Hospital during 2001 to 2012.

Objectives: The objectives of surveys were to assess the magnitude and characteristics of HAIs and to establish suitable methodology and reporting for repeated prevalence surveys. Comparable information in the national level identifies targets for further quality improvements.

Methods: The study was performed in a Finnish tertiary care hospital with 839 beds. A point prevalence survey was conducted in each March during 2006 to 2012 in order to estimate HAI prevalence, associated risk factors and antibiotic usage. In 2011, a joint European prevalence survey was also conducted in Finland nationally. All adult and paediatric inpatients were included in each ward.

Results: 14 % (765/5317) of all patients had one or more HAIs. The most frequent HAIs were surgical site infections (25 %) and pneumonia (25 %). 41 % of all patients were older than 65 years. HAI prevalence increased with age. The prevalence of HAI was most frequent in the intensive care units. On the day of the survey, 18 % of study patients had urinary catheter, 8 % central venous catheter, and 2 % received mechanical ventilation as a risk factor for HAI. 40 % (2140/5317) of the patients received at least one antimicrobial either for prophylaxis or treatment. On the survey day 18 % of inpatients had a community acquired-infection (CAI). Pneumonia (27%) and skin/soft-tissue infections (16 %) were the most common CAIs.

Conclusion: Point prevalence surveys showed that HAIs are frequent. Prevalence surveillance detected changes in the patterns that indicated an infection problem also in our incidence study. New IT-program will be introduced which automatically asks a reason for prescribing antimicrobial treatment to a patient and prompts a notification of a HAI when appropriate. More primary prevention efforts are necessary to address HAIs associated to prevent surgical site infections and with the use of invasive devices.

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INTRODUCTION

Hospital-acquired infections (HAIs) are critical and mostly preventable complications that occur in hospitalized patients. HAIs are one of the most important indicators of quality of care. Both incidence and prevalence surveillance provides tools to prevent and manage the burden of HAIs.

Annual point prevalence surveys have been performed in the Turku University Hospital during 2001 to 2012.

OBJECTIVE

The objectives of surveys were to assess the magnitude and characteristics of HAIs and to establish suitable methodology and reporting for repeated prevalence surveys. Comparable information in the national level identifies targets for further quality improvements.

METHODS

The study was performed in a Finnish tertiary care hospital with 839 beds. A point prevalence survey was conducted in each March during 2006 to 2012 in order to estimate HAI prevalence, associated risk factors and antibiotic usage.
In 2011, a joint European prevalence survey was also conducted in Finland nationally. All adult and paediatric inpatients were included in each ward.

Finland

TURKU UNIVERSITY HOSPITAL (2012)

- Tertiary medical center
- 3085 Employees
- 829 Beds
- 226,764 Patient days
- 54,874 Treatment periods
- 18,056 Inpatient surgery
- 10,483 Ambulatory surgery
- 14 Operating Theatres

RESULTS

Table. 1 Charachteristics of the study poulation and prevalence of HAI during years 2006- 2012 in Turku University Hospital.

	Total number of patients n= 5358 n	(%)	Patients with HAI n= 672	Patients with HAI (12,5 %)
Male	2617	(48,8)	349	(51,9)
Female	2741	(51,1)	323	(48,1)
Age (md)	53,5		57	
Antimicrobial treatment	2061	(38,5)	649	(96,6)
Surgery	1751	(32,7)	268	(39,9)
Urinary catheter	966	(18,0)	213	(31,7)
Central venous cath.	464	(8,7)	163	(24,3)
Mechanical ventilation	112	(2,1)	39	(5,8)
Specialty				
Surgical	1421	(26,5)	201	(14,1)
Medical	1517	(28,3)	232	(15,3)
Paediatric	376	(7,0)	64	(17,0)
ICU (mix adults)	121	(2,3)	49	(40,5)

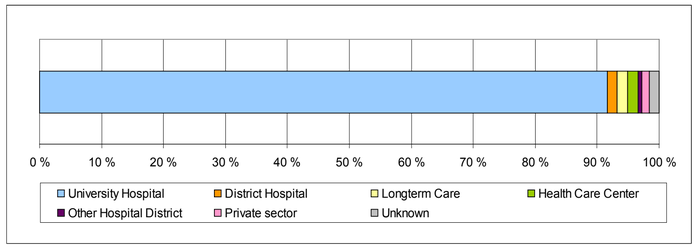

Figure 1. Origin of HAI in prevalence surveys in Turku University Hospital 2006- 2012.

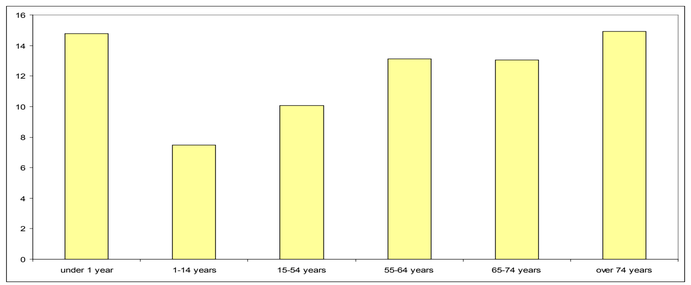

Figure 2. HAI´s (%) by age groups in Prevalence surveys in Turku University Hospital 2006-2012.

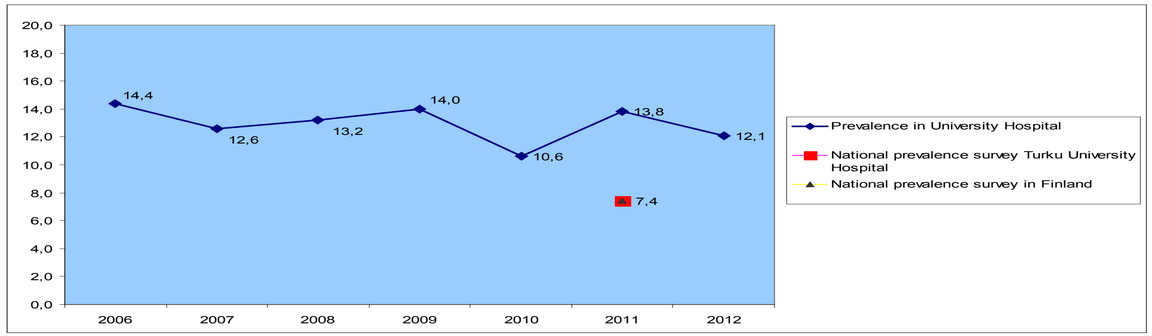

Figure 3. Trends of HAI in prevalence surveys in Turku University Hospital 2006-2012 and results of National prevalence survey in Finland.

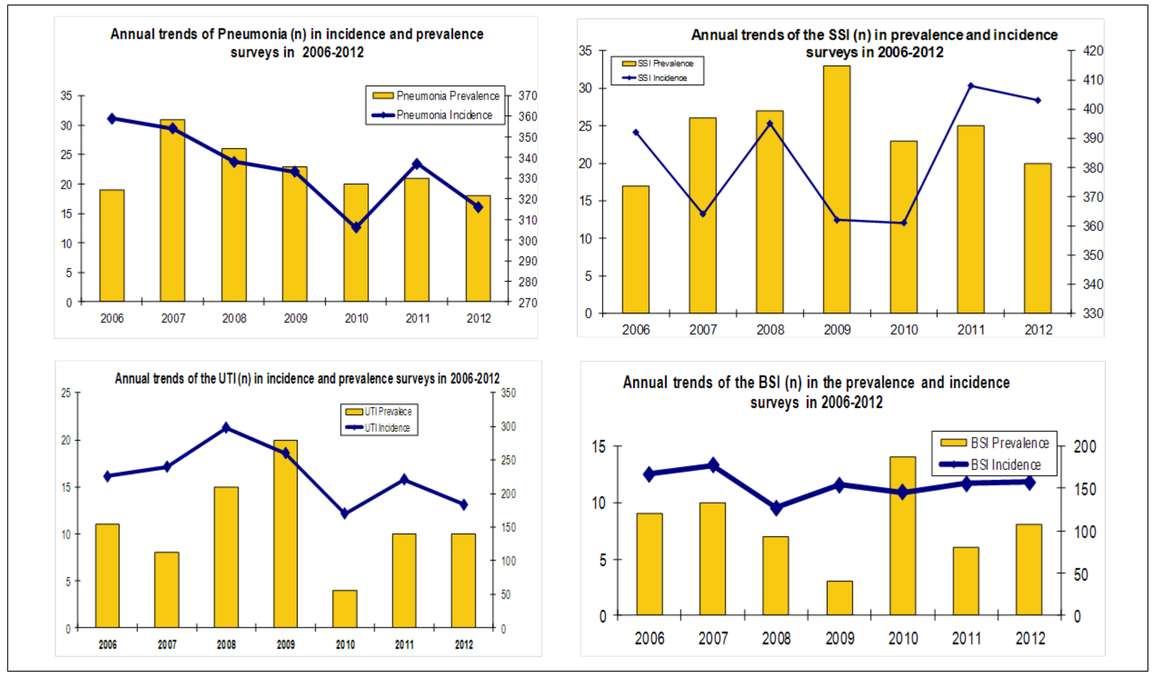

Figure 4. Annual trends (frequences) of the most common HAI in the prevalence and insidence surveys 2006-2012.

CONCLUSIONS

- Point prevalence surveys showed that HAIs are frequent.
- Prevalence surveillance detected changes in the patterns that indicated an infection problem also in our incidence study.
- Both incidence and prevalence surveillance provide tools to prevent and manage the burden of HAIs.
- More primary prevention efforts are necessary to address HAIs associated to prevent surgical site infections and with the use of invasive devices.

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