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Background:
A main objective for a hospital infection control team is to prevent hospital acquired infections. When new hospital buildings are planned or old hospital buildings are renovated the infection control team is often involved to ensure that the hospital environment is designed so that this objective may be fulfilled. Two new university hospitals have been constructed in Norway in recent years, both of them with a high number of single rooms. The bacterium *Clostridium difficile* is the most common cause of nosocomial diarrhoea. In recent years there has been renewed focus on this type of infection due to emergence of severe nosocomial outbreaks in many countries.

Aims:
To investigate whether the incidence of *C. difficile* infection (CDI) among hospital admitted patients is associated with increased access of single rooms in hospitals.

Methods:
Descriptive retrospective epidemiologic approach to investigate the incidence of CDI based on laboratory confirmed cases in four university hospitals during the period 2001–2010, in relation to number of single rooms and isolation room.

Results:
We found no association between the incidence of CDI and increased access to single rooms in this study. However, there were considerable differences in the incidence of CDI between the four hospitals, and a higher number of isolation rooms in the hospitals with lowest incidence of CDI.

Conclusions:
Although the proportion of single rooms increased in several of the hospitals during the study period, we were unable to show any association between single rooms and reduction in CDI among hospitalized patients.

Hospital acquired infection surveillance with intelligent information technology – is it feasible and does it make sense?

O18

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In Europe and other developed regions, healthcare authorities demand healthcare-associated infection (HAI) surveillance in hospitals for quality management and patient safety reasons.

Dilemma:
HAI-surveillance is a time-consuming task for highly trained experts, and unavailability of suitable workforce meets with increasing financial constraints. Therefore, the challenge is to obtain reliable surveillance results without urging on doctor‘s or nurse‘s sparse time resources for documentation of surveillance data. We took this challenge by developing and implementing intelligent information technology (IT) software for extracting and interpreting HAI related surveillance information from structured clinical data held in electronic patient data management systems of intensive care units (ICUs). The software is called MONI and builds on a medical knowledge base with computerized knowledge about all relevant clinical entities plus processing algorithms that evaluate, aggregate, and interpret medical data in a stepwise manner until it can be mapped into the given HAI definitions. Fuzzification of clinical signs and other infection-relevant entities allows for interpretations that closely resemble human reasoning. Comparative clinical studies revealed high precision of MONI surveillance diagnoses (sensitivity >90%, specificity >99%). With this software, 85% expert time can be saved compared to conventional surveillance. It is also suited for day-to-day follow-up of infections and for clinical decision support in ICU. Though some argue

this is much too sophisticated especially for developing countries, IT development and use is common and rapidly growing worldwide. HAI surveillance with intelligent software might be reasonable and feasible also in developing regions.

O19 Screening policy in control of healthcare associated infection – a time for the discussion

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Antimicrobial resistant human pathogens are rapidly increasing. We are facing with rising emergence of multidrug resistant microorganisms nowadays. At the same time the discovery and development of new antimicrobial drugs have slowed dramatically particularly for Gram-negative bacteria.

In the recent years MDR organism control programs have been introduced into health care facilities and guidelines for prevention of transmission of MDR organism. To have a control program for MDR organism became an ethical question. Prompt identification of MDR infected patients is the core of management and treatment of the patients and of the control of healthcare associated infection (HCAI). The rationale control program for MDR organism includes routine active surveillance followed by contact precautions and decolonization measures. There is a consensus that AS should be performed for patients who are transferred from other hospitals, for patients who are related by proximity to an index patient, if there is evidence of transmission of an MDR organism within a patient care unit, or if a pathogen with a new resistance pattern that threatens the ability to treat infection with it has been identified. But paucity of evidence and low quality evidence of systematic reviews leave screening policy more as additional precautions then as standard measure and sometimes more in theory then in praxis. The mobility of patients also would demand new look on the position of screening in the HCAI bundle locally.

An opportunity to learn from different strategies that have been adopted is offered. The discussion should be open and broaden.

O20 Human airway and intestinal bacteria in the Danish child care environment

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Background:

Pre-school children have in average 6-8 disease episodes per year and mostly because of airway infections and gastroenteritis. These spread not only by direct contact, but also indirectly via toys, nursery pillows etc.. There is little knowledge about the type and prevalence of human airway and intestinal bacteria on these surfaces. This study investigates the prevalence of these bacteria in Danish child care center environments.

Methods:

15 predetermined spots from 23 Danish nurseries were analyzed during winter 2012. After incubation, human airway and intestinal bacteria were isolated and identified. The predetermined spots were situated in the toilet, play room and kitchen and were, among others, toys, tables, nursing pillows and kitchen tables.

Results:

All samples were polymicrobial, but mostly grew low-pathogenic bacteria such as *Bacillus* spp., *Acinetobacter* spp. and CNS. Human airway bacteria was found in 51 samples (15%). Intestinal bacteria was found in 42 samples (12%). The most prevalent intestinal bacteria were *Enterobacter* spp. and *Pantoea* spp., whereas the dominant findings in airway bacteria were Non-hemolytic streptococci. The sites with the highest prevalence of coliform bacteria were kitchen tables and sinks as well as different spots in the toilet. Most airway bacteria were found on toys, tables and pillows in the playroom.

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ABSTRACTS

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