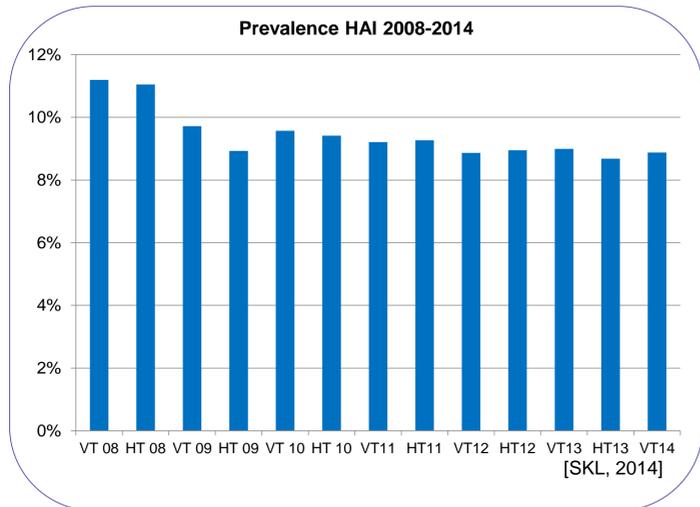


I-tex, Intelligent use of innovative textiles

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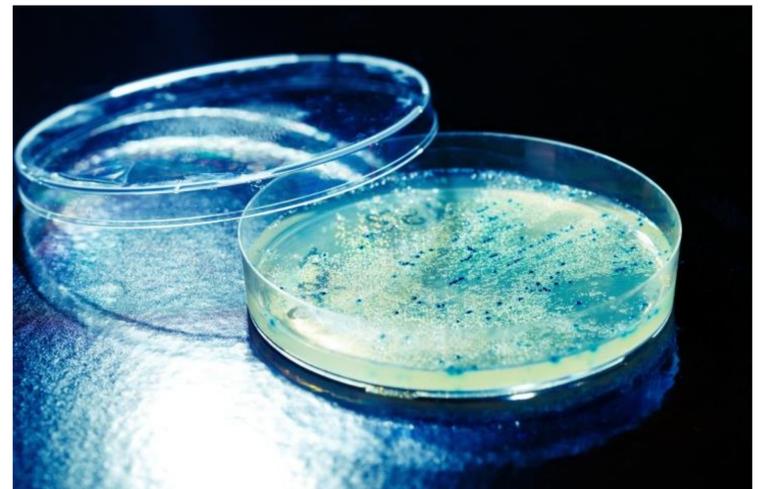


Background

Efforts to reduce the spreading of infections has mainly been focused on hand hygiene, however, the proportion of patients with HAI is consistently high (about 9%) [SKF]. Local initiatives to reduce the prevalence of HAI have shown effects, but in the last years there has been no major improvement at the national level. There has been local successful initiatives such as at Örebro hospital [Läkart. 2014; 111: CIIL]. **Effective cleaning has a major effect on HAI** [Dancer, EJoCMIC, 30,12,1473], and at Capio St. Görans Hospital, where cleaning is a prioritized area, the prevalence of HAI is significantly lower than both nationally and in Stockholm City Council (SLL). Second to contact transmission via hands one of the most significant infection transmission route is through clothing. The spread of trace particles and bacteria between hospital rooms is about 50 times higher via healthcare staff clothing than through the air, and in a recent study it was found that over 60% of the **staff's clothes were colonized with pathogenic bacteria** [Weiner-Well, AJIC, 39]. Spread of infection between patients may also occur via skin particles transported by staff clothing, which was identified to cause the spread of MRSA in Japan [Osawa, JIC, 2003,9, 172].

The idea

The project aims to decrease HAI through **modifying textile materials** by environmentally sustainable **bacterial inhibition**, and **innovative probiotic technologies** combined with **expertise in health care systems**. The probiotic technology is based on the idea that by adding good bacteria to different environments, pathogenic bacteria can be outcompeted [Falagas et.al., J of Hosp Inf, 2009,71,301]. Where and how such techniques can be used will be a key issue for the project. Since textiles represent about 90% of the contact areas in close vicinity of the patient the cleanness of these surfaces plays an important role for patient recovery. One of the key questions is therefore: **can we reduce the spread of infection and bacterial burden**, particularly for vulnerable populations such as children in neonatal units, burn victims and patients with compromised immune systems, **by applying innovative textiles**? We believe that **a broader approach, including both development of innovative materials and behavioral knowledge**, can be one of the key aspects to decrease HAIs.



Approach and implementation

The project will have two main focus areas: **the development of modified textile materials** and an increased knowledge about the **health care systems and human behavior**. An overall goal of the project is to influence and enhance the level of awareness about hygiene issues such as contamination, cleaning quality and bacterial influence in hospitals and healthcare environments. We expect to deliver basics for new **guidelines regarding cleaning in health care** and to influence the specifications in procurement documents for cleaning. The width of the project participants, where the whole chain **from producers to end users** are represented, ensures that the right things are done for the right purpose, with a **user-focus** securing the benefit of society. This type of test-bed and collaboration platform is something lacking today and is in demand from both the industry and the public sector.

In Short

- UDI (Challenge Driven Innovation)
- Start: August 2014
- Project duration: 2 years
- Budget: 2 M€
- 13 partners
- Coordinated by SP

