Zukunft Bau

STRUKTUR / GLIEDERUNG KURZBERICHT

Titel: HYBAU+ Structural Hygiene in Hospital

Title: Guideline for the construction of hospitals from the hygienic point of view - from building to detail

Anlass/ Ausgangslage

kurze Beschreibung des Problems und des Lösungsansatzes
max. 450 Zeichen (mit Leerzeichen)

Objectives of the research project

The aim of the research project is the optimization of the planning and implementation of hygienic hospital buildings as a follow-up project of the project "Praxis Krankenhausbau", which was funded by the research Initiative "Zukunft BAU". The focus of the research project is on the following fields:

Optimal hygiene-safe, structurally functional procedures in hospitals

Hospitals are complex buildings and give great challenges for the involved planners, operators and builders. In addition to hygienic management, the structural condition and the process sequences of a clinic are an important aspect in preventing critical infections. An analysis of weak structural building points combined with a risk assessment of particularly critical functional areas is urgently required. A layout of optimal functional relations ensures an ideal patient sequence through the functional areas of the hospital.

Optimal use of hygienic materials

Materials that are used in hospitals can be classified according to their location and hygienic properties. These classifications and the material qualities determine the colonization and spreading of germs on surfaces. The novel interdisciplinary approach to overlay material qualities with space-process organization will lead to a guideline for the planning of hygienic hospital buildings.

Reason for the research project

The dramatically increased occurrence of resistant bacteria in hospitals, the resulting fear of many patients becoming infected with one of these germs in a hospital, unpleasant incidents of poor hygiene and not least the change of the Infection Protection Act render it essential for hospital operators to deal with the topic of Hospital Hygiene. At the same time, this does not only apply to hospital operators, but especially to architects and all professionals who are involved in the planning and construction of hospitals.

According to the Federal Ministry of Health 400,000 - 600,000 patients fall ill to hospital-specific infections annually. These patients have contracted an additional disease requiring treatment, a so-called nosocomial infection, within the framework of inpatient or outpatient treatment. Up to 10,000 people annually die because of these infections. The marginal scientific research on the issue of Structural Hygiene, such as the "Guideline for Hospital Hygiene and Infection Prevention" (2004) of the Robert Koch Institute8, whose recommendations are only evidence-based to a small extent, shows the need for this work. In addition to the process-oriented hygiene management, the structural and functional condition of a clinic is a relevant factor in the fight against nosocomial infections.

Gegenstand des Forschungsvorhabens

Beschreibung der Arbeitsschritte und des Lösungswegs
max. 4.300 Zeichen (mit Leerzeichen)

Subject of the research project

The research objectives were developed with as follows:

Work packages CONSTRUCTION

Classification and hierarchization of laws, regulations and recommendations of private organizations with regard to functional requirements.

Expert interviews to gain insight views to the behavior of people who are dealing with the topic of hospital hygiene in the functional areas of surgery, emergency care and intensive care.

Implementation of a data collection of German hospitals to determine structural deficits in hygienic areas.

Research of different concepts in functional areas as operation, emergency department and intensive care unit, including work processes and hygienic feasibility.

Work packages MATERIAL

Definition Requirements for the material: Different requirements for the room climate were assessed and the common qualities for functional units were determined. The same procedure has been achieved at the component and material level for the hygienic critical functional sites as OP, emergency shelter, care and intensive care unit.

Cleaning experiments: The aim of the cleaning experiments was to investigate the influence of the surface properties on the cleanability.

Colonization experiments: The aim of the colonization experiments were to determine the influence of the surface properties on the persistence of microorganisms.

Work packages HYGIENE

Systematic Review: Data search for studies that have been investigated the influence of disinfection dispenser in the patient's room on the compliance of hand hygiene (topic 1). On the other hand, there has been an investigation on the influence of single-bed rooms (topic 2) and patient room size or the distance between patient beds (topic 3) on nosocomial colonization and infection rates.

Survey of structural hygiene within the framework of KISS: Since 1997, the hospital infection surveillance system (KISS) has recorded nosocomial infections rates and multidirectional pathogens (MRE) throughout Germany. The data obtained from the survey were processed using descriptive statistics to determine the association of nosocomial infection rates with various risk factors and potential risk factors.

Fazit

Beschreibung der geplanten Ziele und der erreichten Ergebnisse
max. 700 Zeichen (mit Leerzeichen)

Conclusion: Development of an integrated solution concept

The identified partial solutions regarding the functional building structure and the material were combined to a holistic solution and based on the different methods in the work packages. With these recommendations, the building can be designed in such a way that they can have a positive effect on infection in the areas of surgery, emergency care and intensive care units in hospitals.

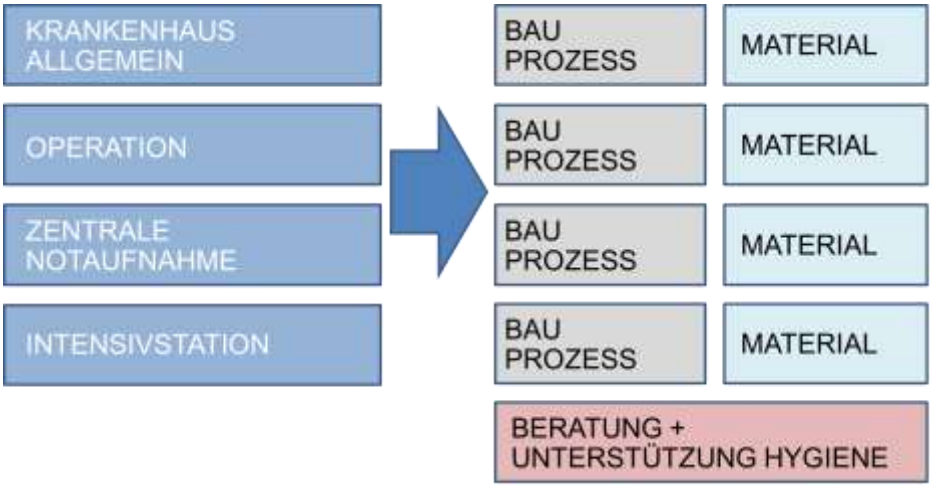

Figure 1: Principle of organization Planning recommendations

The recommendations are to be seen as a first step towards hygienically robust structures and represent only a component within a package of measures. The significance of the recommendations developed in this project cannot be definitively concludet yet. For this topic it is necessary to push on further research in the future.

Basic Data

Short titel: Structural Hygiene in Hospital

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