

Copper against germs

600 solid copper door handles have been enlisted for infection prevention. The largest project of its kind in Europe and USA aims to reduce germs by one third.

Hamburg, 10/29/2014. The [Asklepios Klinikum Harburg](#) in Hamburg, Germany, has equipped large areas of its recently opened new building with a total of 600 door handles made of copper alloys. The project is the largest of its kind in Europe and the USA. Copper has been shown to have antimicrobial properties and significantly reduce dangerous germs such as bacteria, fungi and viruses. Door handles are the most commonly used contact surfaces in hospitals. A recent on-site random sampling of these new door handles made from solid cast-copper alloys has shown that up to two-thirds reduction in germs is possible. This is especially critical for patients in high-risk areas such as intensive care units and isolation rooms.

“Patient safety is our highest priority. With the use of hundreds of copper handles to prevent infection, we have now set a further milestone on the important topic of hygiene, demonstrating once again our leading role in combating and reducing hazardous germs, especially multidrug-resistant pathogens,” says **Dr. Thomas Wolfram**, spokesman for the Group management team of Asklepios Kliniken Hamburg. “Hands are known to be the main carriers of pathogens. Thus, door handles play an important role as the most common contact surfaces. This is where the antimicrobial copper material comes in,” explains **Dr. med. Susanne Huggett**, medical director of Asklepios’ large [MEDILYS](#) laboratory in Hamburg. “Made of 70 percent copper, the handles have a strongly germ-reducing effect, as we know from our own studies. They are thus part of a comprehensive set of measures to prevent infection. Rather than a replacement, they are an effective supplement to established hygiene measures such as hand sanitizer, regular surface disinfection and the training of our employees in matters of hygiene,” added Dr. Huggett. Based on spot checks carried out in the summer of 2014 at the Asklepios Klinikum Harburg, it is reportedly expected that under everyday conditions in hospitals the use of copper handles could achieve a reduction of germs by more than 50 percent compared to the spread of germs on traditional door handles. The large MEDILYS Asklepios laboratory in Hamburg will accompany the now underway project with regular examinations at the Asklepios Klinikum Harburg and present further investigation results in a few months.

“The realization that copper has a disinfecting effect goes all the way back to ancient Egypt at the time of the Pharaohs. For example, at the time, copper chips were stirred into ointments for wound disinfection. With the help of modern science, we are only now beginning to understand how copper can have this effect,” says **Dr. Anton Klassert**, business manager of the [German Copper Institute](#). Given the increasing proliferation of bacteria, fungi and viruses, the centuries-old insight is now getting a very current twist.

The goal is to stop infections and improve patient safety

Additional information

In Europe, every 14th patient is diagnosed with a so-called nosocomial infection as a result of a hospital stay, that is, an infection linked to the time spent in the hospital. Adverse complications include urinary tract infections, wound infections after surgery or lung inflammation after artificial respiration. According to current estimates, 147,000 persons all across Europe die per year of similar causes; in Germany alone around 400,000 to 600,000 people become infected in hospitals. Many surface materials commonly used in hospitals or nursing homes have been shown to be a preferred source of cross-contamination, meaning that pathogenic microorganisms already contaminated are directly or indirectly transmitted to non-contaminated objects or people. Even enhanced surfaces disinfection cannot completely break this vicious circle. Here, new, innovative solutions are needed that do not solely rely on external cleaning operations. A possible solution is available in the shape of antimicrobial copper materials used for high-use contact surfaces which may thus represent an additional barrier against nosocomial infections caused by pathogens such as multidrug-resistant bacteria (MRSA). Globally, more than 200 medical and public institutions have therefore already decided to use antimicrobial copper components - a number that continues to grow, according to the findings of the Copper Institute.

Pioneering role for Asklepios

As early as 2008/2009, the Asklepios Klinik Wandsbek in Hamburg, in cooperation with the German Copper Institute, used antimicrobial copper alloys to increase patient safety. To that end, two hospital wards over several months in summer 2008 and in winter 2008/2009 were equipped with several dozen door handles, door plates and light switches made of special copper alloys. To facilitate the research, neighboring areas retained their conventional handles and switches made of aluminum, stainless steel or plastic. Independent scientists at the University of Halle-Wittenberg (Germany) took regular samples and compared the number of germs on the various contact surfaces with convincing success. "We are very happy that Asklepios carried out this field test with us at the time as it provided the spark for the entire project," said Dr. Anton Klassert. "Meanwhile, studies around the world and in hospitals have confirmed and even exceeded previous results. Among other places, studies at the Medical University of South Carolina have now clearly demonstrated that not only bacterial counts but also rates of infection have been significantly reduced as a result of the use of antimicrobial copper alloys, thus reducing the risk of nosocomial infections in intensive care units by up to 58 percent", said Dr. Klassert.

Antimicrobial copper materials have been shown to be effective

Studies from across the globe have shown that copper surfaces not only inactivate antibiotic-resistant bacteria but also many other pathogens. To improve hygiene, the Asklepios Klinikum Harburg now exploits this finding by installing antimicrobial handles in the ICU and in many intensive care rooms. Klassert comments: "To us, it is important to emphasize that the installation of antimicrobial copper products - with now over 100 different parts on the market - must not be used as an excuse to neglect or skip altogether the usual standard hygiene measures such as hand washing or disinfection. Antimicrobial copper surfaces are always to be regarded as a *complementary* measure to the four-pillar strategy advanced by the Robert Koch Institute." The copper handles the [Wilhelm May](#) company (Velbert, Germany) installed at the Asklepios Klinikum Harburg consist of a

Additional information

solid copper alloy, i.e. there is no coating but a product that has been completely made of antimicrobial copper material. This ensures that the germ-reducing effect is maintained even after scratches or minor damage.

About Asklepios Klinikum Harburg

Asklepios Klinikum Harburg currently has 774 beds, 1,500 employees and in 2013 treated 76,000 patients (43,500 outpatients and 32,500 inpatients). The new building (building 1), completed in summer 2014, was constructed at a cost of EUR 52 million. The six-storey building, complete with underground parking and a new central lobby, boasts a helipad, a significantly enlarged central emergency department, new cardiac cath labs, CT, a hybrid operating room, as well as hypermodern intensive care units with space for 60 patients. The 600 antimicrobial copper door handles were installed in the intensive care area, in the stroke unit and in the isolation rooms on different floors in Building 1.

About Asklepios:

Asklepios is a leading private operator of hospitals and healthcare facilities in Germany. The Group pursues a responsible, sustainable growth strategy that is geared towards high quality and innovative strength. With this approach, Asklepios has enjoyed dynamic development since its formation more than 30 years ago. At present, the Group has around 140 healthcare facilities and employs more than 45,000 people throughout Germany. In the previous financial year, 2013, around 2.2 million patients were treated in Asklepios Group facilities.

Photo Captions:

- “Touch/contact sample” at the new Asklepios Klinikum Harburg (Hamburg, Germany): a copper handle is being checked for germs.
- As a measure against germs, Asklepios Klinikum Harburg (Hamburg, Germany) had 600 copper handles installed. Photos: Asklepios

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