



# At war without an army

Around 250 people die in traffic accidents every year. Healthcare associated infections took 1,500 lives. Society invests considerable resources to decrease the numbers of traffic victims, but not yet into working preventively against hospital infections. We are at war with multi-resistant bacteria. Without an army.

BY: LISA VON GARRELT

**R**ESOURCES ARE LIMITED, and Swedish health care has many holes to fill. But preventive work regarding antibiotic resistance should be prioritized on the agenda.

"If 200 billion dollars are invested up through 2050, the expected outcome of fatalities caused by antibiotic resistance in the world could be halved, according to the World Bank report from September 2016. We can't afford not to invest in this strategically; prevention provides such an enormous exchange," says Stephan Stenmark, Physician at Department of Clinical Microbiology, Umeå University and chair of the Strama Programme Council.

Anders Tegnell, head of the Department of Epidemiology and Evaluation at the Public Health Agency of

Sweden, also argues that there is much to be done to bring down health care-related infections in Sweden.

"Especially by using antibiotics correctly, neither too much nor too little, and by following the procedures that exists concerning healthcare hygiene. We also know that there is a lot of knowledge that is not being applied to its full extent at all times out in our operations."

Improvement requires data. Infektionsverket is a national IT support for documenting, storing, and providing feedback on information on health care-related infections and antibiotics use. The purpose of the tool is to prevent health care-related infections, to improve flexibility for treatment recommendations, and to reduce the use of broad-spectrum antibiotics. But it is not fully used.

"TODAY, THREE OUT of ten county councils or regions do not use the tool because they haven't solved the issue of adaptation to their journal systems", Stenmark says and continues:

"We need more money in the administration budget for Infektionsverket, and the county councils and regions need more money to be able to prioritize adap-

## The hunt for new antibiotics

"Dig where you stand", they say; this applies to antibiotics as well. One of the latest discoveries is the soil-dwelling bacteria *Eleftheria terrae* and its antibiotic substance, teixobactin. The substance was discovered after researchers went through over 10,000 different bacteria that grow in ordinary soil. What gives them hope is that teixobactin does not seem to result in resistance in the same way as other antibiotics. On the negative side is the absence of the effect against gram-negative bacteria.

## Antibiotic consumption

Sweden: 13.0 DDD (defined daily doses) are consumed per 1,000 inhabitants every day.  
Greece: 32.0 DDD. Highest in Europe.

tations of their journal systems. As it stands now, the best tool for real-time feedback is not in use, and we can't have that."

Improvements have taken place in Sweden. In 2008, the goal was that the occurrence of hospital infections would be halved. Long-sleeved garments disappeared from health care institutions, and plastic aprons and hand sanitizer were placed by every patient bed. Enthusiasm was great and the figures fell, but now the curve is pointing alarmingly upward again.

ONE OF MANY missionaries in the area is Christian Kinch. He is CEO at Bactiguard, which has a portfolio containing catheters for urinary channels, blood vessels, and respiratory tracts, all coated with a patented surface layer consisting of gold, silver, and palladium that does not kill bacteria but prevents bacteria from sticking and colonising.

Bactiguard's idea is simple: preventing health care-related infections caused by medical devices. It is a difficult task. But Kinch is convinced that it's possible.

"In the United States, 4.5 percent of patients suffer from hospital infections. In Sweden, the figure is twice as high. One out of every ten patients admitted to hospitals in Sweden thus stay one or more extra days owing to a hospital infection. The cost ends up around 6-7 billion SEK extra in extended health care", he says and compare with the United States.

THE US CENTER for Disease Control and Prevention has set up guidelines, routines, and recommendations for preventive work against hospital infection. Those who do not follow the routines do not get paid. It has been that way since 2008.

"If they have used all available, scientifically proven technology and followed all routines that have been set up, but despite that they have patients who suffer infections, they are paid compensation. Not otherwise; the hospital then pays out of its own pocket. It's clear they're doing everything in their power to prevent infections by working preventively, which yields results." ■

**"Multi-resistant bacteria is a greater threat to humanity than climate change"**

Hans Rosling, professor of International Health.