

More and more Danes infected with MRSA bacteria

September 19 2013



Danmap.

In 2012, 1,556 Danes were found positive with methicillin-resistant staphylococci - MRSA. This represents an increase of 20% from 2011. In fact, the total number of cases has almost doubled since 2009. MRSA bacteria are resistant to antimicrobial agents that are essential for treatment of treating life-threatening infections in humans.

Otherwise healthy people may carry MRSA without showing any symptoms or signs of infection. The problem with people who are carrying MRSA is that the [bacteria](#) can spread at hospitals if not discovered in time. Of the 1,556 people positive, 54% had an infection when MRSA was identified. In immunosuppressed people or hospitalized patients, MRSA can lead to serious infections.

As in previous years, the number of hospital acquired cases continued to be very low: 67 in 2012 compared to 58 in 2011. In contrast, the number of community-acquired MRSA rose from 596 in 2011 to 726 in 2012. Community acquired cases were often seen in connection with family visits abroad, receiving family visitors from abroad, or working in the pig farms.

The pig-related MRSA - also known as CC398 - was identified in 232 people (164 in 2011), of whom 92 had an infection at the time of diagnosis (63 in 2011).

"The continued increase in the number of cases of MRSA, particularly in people who are in contact with pigfarms, causes problems both for those affected and for the [healthcare system](#)," explains Areahead, MD Robert Skov from Statens Serum Institut.

MRSA guidelines are effective

"The low incidence of hospital-acquired infections indicates that the Danish regulations function very well, and - in particular - that there is a high level of compliance to these among the [healthcare staff](#)," he continues.

As a consequence of the continued rise in the number of MRSA cases, the MRSA guidelines from the Danish Health and Medicines Authority were revised in November 2012. Contact to [pigs](#) has been included as a risk factor for MRSA, and patients are asked about contact to pigs when admitted to hospital. Follow-up on the effect of treatment on otherwise healthy MRSA carriers has also been tightened up.

Increase of MRSA in pigs

In 2012, 709 pigs at abattoirs and 219 samples of tank milk from dairy cattle were also examined for MRSA.

Compared to 2011, the number of MRSA-positive pigs for slaughter has increased significantly: From 44% in 2011 to 77% in 2012. The markedly higher occurrence may be due to the fact that there are more MRSA-positive herds than previously, but this cannot be concluded definitively as MRSA can be transferred between the animals during transport.

MRSA found in tank milk from dairy cattle

Last year was the first year that tank milk was examined for the presence of MRSA. In all, 2% of the samples tested positive for MRSA, and two samples were identical with a MRSA type found in pigs - the type known as MRSA CC398.

The positive herds were subsequently tested again. The results showed that a number of the samples no longer contained MRSA, which may indicate that MRSA in cattle is more transient than in pigs. If MRSA is identified in a herd of pigs, it is very difficult to eradicate it from this herd.

Raw milk and dairy products are not considered a source of MRSA as the raw milk is pasteurized and subjected to several other treatments.

"We did not test for MRSA in meat in 2012 as there is still no indication that meat is a source for transmission of MRSA in humans. It seems that pigs are still the major source of MRSA-CC398, and the occurrence of this MRSA type in tank milk may be attributable to contamination from pig production," explains Yvonne Agersø, Senior Researcher at National Food Institute, Technical University of Denmark.

"It is important to prevent that occurrence of MRSA in pigs increase and that MRSA spread to other areas of livestock production," she adds.

MRSA bacteria

MRSA is short for Methicillin-Resistant *Staphylococcus aureus*.

When bacteria are exposed to antimicrobial agents, they protect themselves by developing resistance. They do so by altering their DNA - either through mutation or by transferring resistance genes between bacteria. It is therefore important to only use antimicrobial agents as required to prevent overuse.

Staphylococci are bacteria found in humans, animals and in our surrounding environment. *Staphylococcus aureus* is part of the normal nasal and skin flora in approx. 50% of the population. *Staphylococcus aureus* can cause a wide range of infections ranging from superficial wounds and abscesses to serious infections such as Osteitis and Endocarditis. In hospitals, *Staphylococcus aureus* is the most frequent cause of post-surgery infections.

In 2012, MRSA was identified in 1,556 people. This represents an increase of 20% on 2011, when 1,292 people were infected. Only 67 people were infected at hospitals, which is at the same level as in 2011 (58 cases). Community-acquired MRSA was identified in 726 people compared to 596 in 2011 (an increase of 22%), and cases of pig-type MRSA (CC398) rose by 41% from 164 in 2011 to 232 in 2012. Of those infected with pig-type MRSA, 92 (40%) had an infection when the diagnosis was made, compared to 62 (38%) in 2011.

The incidence of MRSA in humans in Denmark is still low compared to many other countries in Europe.

Animal and meat production in Denmark

A large majority of the meat products produced in Denmark come from pigs. In 2012, Denmark produced a total of 29,047,000 pigs, corresponding to 1,902 million kg of pork, along with 111,080,000 broiler chickens, corresponding to 168 million kg of chicken meat, and 539,000 cattle, corresponding to 138 million kg of beef. In addition, there were 580,000 dairy cattle in Denmark, producing 4,928 million kg of milk.

Meat was examined for MRSA in the period 2009–11, but this was not done in 2012. The risk of meat constituting a source of MRSA infection in humans is still considered to be very small.

New MRSA guidelines in 2012

The second edition of the Danish Health and Medicines Authority's guidelines on MRSA was published in November 2012. These are national guidelines for people employed in the healthcare and social services sectors and are designed to prevent the spread of MRSA both within and outside hospitals. The revised guidelines include contact with pigs as a risk factor. In addition, the follow-up of otherwise healthy carriers of MRSA has been tightened up so as to restrict the spread of MRSA. The Danish Health and Medicines Authority now recommends that the entire household is checked after treatment to identify any cases in which treatment has not been successful and which may therefore constitute a continued risk of infection.

DANMAP 2012

The figures are from the 2012 DANMAP report—the 17th time this report has been published. Each year, the DANMAP report accounts for

the use of [antimicrobial agents](#) and the occurrence of antimicrobial resistance in animals, food and humans.

Provided by Technical University of Denmark

Citation: More and more Danes infected with MRSA bacteria (2013, September 19) retrieved 27 April 2024 from <https://medicalxpress.com/news/2013-09-danes-infected-mrsa-bacteria.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.