



Extract from the report to the  
Public Accounts Committee on  
the effort made by the Ministry  
of Food to combat LA-MRSA

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# 1. Introduction and conclusion

## 1.1. Purpose and conclusion

1. This report concerns the effort made by the Ministry of Environment and Food of Denmark (the Ministry of Food) to combat resistant bacteria in food-producing livestock. Livestock-associated MRSA (LA-MRSA) is multi-resistant bacteria that have spread rapidly from the farming industry to the rest of society in Denmark. The Ministry of Food has the overall responsibility for managing the effort to combat LA-MRSA. Rigsrevisionen initiated the study in September 2014.

*LA-MRSA is staphylococcus bacteria that are resistant to several types of antibiotics.*

LA-MRSA was first detected among Danish pigs in 2007 and today the bacteria have infected 68 per cent of all Danish herds of slaughter pigs. The number of persons registered as having been infected with LA-MRSA is increasing and it is now the most common MRSA type in Denmark. So far, five chronically ill persons have died after having been infected with LA-MRSA.

*Antibiotic-resistant bacteria are resistant to one or several antibiotics. The bacteria can become resistant when humans and animals are treated with antibiotics.*

2. The background for the examination is the fact that the use of antibiotics in farming and in people has increased over the past many years and has led to the emergence of new and complex problems with resistant bacteria. The development of antibiotic-resistant bacteria may limit the possibilities of treating humans and livestock, and in the longer term, it may not be possible to treat patients for common infectious diseases.

Moreover, resistant bacteria pose a growing financial challenge to the health sector. The occurrence of resistant bacteria is therefore an issue that needs to be addressed by the food safety authorities and health authorities in a concerted effort. This mode of action is in accordance with the Ministry of Food's objective to resolve issues relating to resistant bacteria within the framework of a *One Health* perspective, i.e. through increased collaboration and inter-disciplinary integration among several departments. The Ministry of Food is pursuing a *One Health* approach in close collaboration with, in particular, the Ministry of Health.

3. We have chosen to focus on LA-MRSA, because it is a relatively new problem. Since problems caused by resistant bacteria may emerge any time, it is relevant to examine how the Ministry of Food has managed a new and fast-growing resistant bacterium. It is also relevant to examine whether socio-economic costs, i.e. costs imposed on the health sector and animal production industry, were taken into account when the ministry initiated its measures to reduce the occurrence and spread of LA-MRSA.

4. Bacteria from livestock may become resistant when sick livestock are undergoing antimicrobial treatment. Subsequently, resistant bacteria may be transmitted to humans through either direct contact with live animals or when the animals are slaughtered. In the years 2010 to 2014, the Ministry of Food's effort directed at LA-MRSA followed two strategies. The first strategy focused on collecting data on the occurrence and distribution of LA-MRSA in order to create a basis for developing a strategy to manage LA-MRSA. The second strategy focused on reducing and changing the use of antibiotics in farming, in general, in order to keep the level of resistant bacteria in Denmark at a low level, including LA-MRSA.

5. The purpose of the study is to assess whether the effort made by the Ministry of Food to combat LA-MRSA has been effective and has taken into account the socio-economic costs of LA-MRSA. The report answers the following questions:

- Has the Ministry of Food carried out a comprehensive risk assessment of LA-MRSA?
- Has the Ministry of Food implemented the two tracks of its effort to reduce the occurrence and spread of LA-MRSA in a satisfactory manner?
- Has the Ministry of Food considered relevant socio-economic consequences when it initiated its measures to reduce the occurrence and spread of LA-MRSA?

## CONCLUSION

The occurrence of LA-MRSA in animals and humans has increased significantly since 2010. LA-MRSA is mainly detected in pigs, from which infection is transmitted to humans. Costs for screening and treatment of LA-MRSA in the health sector are increasing. Rigsrevisionen finds that the Ministry of Food and the Ministry of Health together should have examined the health economic impact of LA-MRSA. The Ministry of Food has so far initiated and implemented its effort to combat LA-MRSA without taking into consideration the health economic impact. This is not considered satisfactory by Rigsrevisionen.

Rigsrevisionen finds it positive that the Ministry of Health – in connection with this report – has estimated the direct costs imposed on the health sector due to LA-MRSA in 2014 and beyond. This estimate provides the Ministry of Food with a more informed basis for qualifying the scope of its future effort. The Ministry of Health has informed Rigsrevisionen that the estimate may contribute to qualifying the ministry's considerations concerning future efforts to combat antibiotic-resistant bacteria, in general.

The risk assessment of LA-MRSA carried out by the Ministry of Food is based on general knowledge of the risk of infection being transmitted to humans, but does not include an assessment of the economic consequences for the health sector and farming industry. Rigsrevisionen finds that the ministry has taken steps to, yet not implemented, an all-inclusive risk assessment in relation to LA-MRSA. This is not considered satisfactory by Rigsrevisionen.

The Ministry of Food has not implemented the two strategies of its effort to combat LA-MRSA in a satisfactory manner. The first track focused on collecting data on the occurrence and distribution of LA-MRSA. In the years 2010 to 2014, the ministry launched several initiatives to collect more knowledge on LA-MRSA. Rigsrevisionen recognizes that collecting new research-based knowledge on LA-MRSA is a long-term project. At the same time, however, Rigsrevisionen has established that the ministry has not managed the launched initiatives effectively. The ministry has not monitored the progress of the initiatives and, generally, its work has been characterized by a lack of continuity and overview. Rigsrevisionen has also established that the ministry did not implement any measures that were directed specifically at LA-MRSA before the end of this period.

The ministry's second strategy focused on reducing and changing the use of antibiotics. This track represented a general effort to combat resistant bacteria, but was also, according to the ministry, an important element in the effort directed at LA-MRSA. However, the ministry had no guarantees that this approach would be effective in putting a brake on the development of LA-MRSA. Rigsrevisionen has found that the ministry's overall effort has not effectively curbed the occurrence of LA-MRSA despite the fact that the ministry has achieved its objective of reducing the use of antibiotics by 10 per cent.

In April 2015, the Ministry of Food launched an action plan for LA-MRSA. Rigsrevisionen finds it positive that the ministry has defined targets for the effort against LA-MRSA in the action plan and is planning to monitor the process very closely, and implement adjustments if the targets are not achieved. However, the ministry's action plan still does not take into account the socio-economic impact of LA-MRSA.

Rigsrevisionen recommends that the Ministry of Food, going forward,

- considers the need to analyse the health-economic impact of antibiotic resistance in cooperation with the Ministry of Health, to allow the Ministry of Food to initiate its measures with due regard for the socio-economic costs;
- strengthens the monitoring and general overview of initiatives launched and carries out an overall assessment of whether the objective of maintaining a low level of resistant bacteria has been achieved.